

A SYSTEMS PERSPECTIVE OF PROFESSIONAL DEVELOPMENT IN A K-12 SCHOOL
DISTRICT

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Acknowledgements

Abstract

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Chapter I. Introduction and Background

Introduction

By many accounts, something must be done about our schools. From the declaration by the National Commission on Excellence in Education (1983) that our future was jeopardized by a “rising tide of mediocrity” to the accountability mandates of the recently re-authorized Elementary and Secondary Education Act, there has been a general sense that the status quo in education is not adequate—that something more, different, or better must be done.

Many have noted the striking consistency between the way schools of the past and present function. Also consistent is the way that reforms rise and falter. Many reforms have established a beachhead, constructed somewhat elaborate castles, and then crumbled as dollars and leaders disappeared, leaving the waves of educational time to erase all traces—the educational landscape remarkably unaltered. Although the passing reforms have rallied around various issues such as standards (Reigeluth, 1997), how to teach reading (Fox, 2001), and curricular reform (Duffy, Rogerson, & Blick, 2000) there has been consistent agreement among those who would improve education that a significant school-related variable impacting student achievement is the quality of the teacher and the instruction he or she provides. The link between good teaching and high student achievement is strong (Casserly, 2002; L. M. Desimone, Porter, Garet, Yoon, & Birman, 2002; Eaves & Furry, 2000; Protheroe, Lewis, & Paik, 2002; U.S. Department of Education, 2002). Yet the American educational system has been unable to leverage this relationship for the benefit of all students, especially those who most need it as the recent Education Week report *Quality Counts 2003* (Edwards, 2003), noted calling the problem the “teacher gap”. It is as important to have highly skilled teachers in every classroom, as it is difficult to achieve this goal.

Recent educational reforms were energized by a sense of national urgency framed by the trajectory of the Soviet satellite, Sputnik and refueled by *A Nation at Risk*. The present urgency is attributed to the changing demands of society, the increased heterogeneity of classrooms, an aging teacher force, efforts to decrease class size, increased student enrollment, difficulty in retaining new teachers, and a climate of accountability and consequences provide the urgency for addressing the growth and maintenance of high quality teachers (Protheroe et al., 2002).

Central to providing high quality instruction to all students are questions of how to prepare teachers, how to keep good teachers in the profession, and how to provide for and support the professional development of in-service teachers. The preparation of quality teachers is sparking a lively debate since teacher preparation programs have not been able to keep pace with the demand for quality teachers. This has led to alternative certification programs which threaten the dominancy of the teacher preparation industry (Lasley, Bainbridge, & Berry, 2002). Representing the voice of traditional teacher certification is Linda Darling-Hammond of Stanford University (Educational Commission of the States, 2000). Advocating non-traditional approaches to teacher certification and expedited paths to the classroom is Chester Finn of the Thomas B. Fordham Foundation (Educational Commission of the States, 2000). Although no clear winner has emerged from this wrangling, a recent report on the teaching gap [Richardson, 2003 #780] reminds us that the problem of keeping schools staffed with qualified personnel has not been solved.

Adding to the problem of preparing enough teachers to meet the mandates of the No Child Left Behind act (U.S. Department of Education, 2002) is the difficulty of retaining teachers in the profession. Sixteen states (Edwards, 2003) have adopted and financed mentoring programs to nurture budding professionals in their initiation to a career in education, since the

attrition in the first years has proven particularly rampant. Professional development has come to be viewed as a key to teacher retention, and therefore has become a way of protecting the investments that schools make in teachers (Protheroe et al., 2002).

A third consideration of providing high quality instruction for all students is the long-recognized importance of professional development of in-service teachers. It has long been thought that the school districts have some responsibility for the professional development of teachers. School district commitment to professional development, however strong, is based on the premise that professional development leads to better instruction that, in turn, leads to achievement gains. As obvious as this may seem, researchers from the American Institutes for Research (1999) advise that efforts to evaluate the link between professional development and achievement gains are beyond the scope of local capacity, commenting that, “there are simply too many intervening variables between professional development experiences and subsequent gains in student achievement to make such studies feasible” (p. 19).

Volumes about professional development have proliferated in the educational literature. Lists of principles to guide the design of professional development and accounts of sundry programs and their results are easy to find. Many articles outline the characteristics of traditional professional development, pronounce them unsatisfactory and proceed to detail the distinguishing features of professional development more consonant with progressive notions of teaching. Proclamations that, “The old model of ‘sit ‘n’ git’ has been replaced with programs that focus on long-term goals and continuous improvement” (Watters, 2002) contrast with the research of Birman, Desimone, Porter, and Garet (2000) who claim that the traditional mode of professional development is still dominant (79 percent of teachers in their study participated in traditional professional development).

While many educators have opinions, some informed by research, about what should constitute effective professional development, less clear is how the various principles of effective professional development can be used together to foster improved pedagogy that is sustained on a broad scale. Many varieties of professional development for K-12 teachers are discussed in the literature. The literature enumerates successful school/university partnerships (Day, Hadfield, & Kellow, 2002; Papanastasiou & Conway, 2002; Sandholtz, 2002), professional development efforts that target teachers in specific disciplines (Davis, 2002; Loucks-Horsely, Hewson, Love, & Stiles, 1998), efforts that focus on multiple schools across districts (Borko, Elliott, & Uchiyama, 2002; King, 2002), and professional development that targets school-wide change (Andrews & Lewis, 2002), but few accounts that give any sense about how really to initiate, nurture, and sustain effective professional development at the school district level.

A troubling gap between knowledge and practice exists (Loucks-Horsely et al., 1998). Richardson (2003) notes that “most staff development that is conducted with K-12 teachers derives from the short-term transmission model; pays no attention to what is already going on in a particular classroom, school, or school district; offers little opportunity for participants to become involved in the conversation and provides no follow-up” (p. 401). Writing in one of the few studies that focus on professional development from a district perspective, Elmore and Burney [, 1999 #777] point to the knowledge and application gap: “[A]lthough we know a good deal about the characteristics of good professional development, we know a good deal less about how to organize successful professional development so as to influence practice in large numbers of schools and classrooms” (p. 263).

Purpose

In the interest of addressing the gap between what is known about professional development and how little it is applied in schools, I am undertaking this study. A basic assumption underlying the study is that we need not accept the current state of affairs. Many good educational ideas have met their end when they were attempted in the classroom, which reminds me of the teacher who opined that it would be so easy to teach if it weren't for the kids. The same is true of professional development. It would be easy to do and we'd be super effective if we didn't have teachers, schools, and districts—but alas, we have all of these. I think that one of the reasons efforts to improve professional development have either faltered or failed is that we have not seriously grappled with the complexity of the issue. Effective professional development that changes the way teachers teach and subsequently leads to improved student learning, requires more than figuring out what activities to do, how many release days to give, and how to scrape together the money to fund all we want to do. Effective professional development takes place in schools that are part of school districts that are influenced by state policies. Effective professional development is about teaching better, which means changing what goes on in classrooms. Professional development is about teachers who have certain ideas about what it means to teach, to learn, to be a teacher; they have different motivations, contractual obligations, licensure requirements, and career trajectories. These and other issues combine to create the complex environment in which the professional development of most teachers takes place.

It is my intent in this study to expand the current knowledge of professional development by applying systems theory to provide an understanding of the professional development efforts of one school district. The research that I am proposing is a holistic perspective of professional

development as a system of interactions in one school district. To further explain the importance of this research I will show that there is a lack of district-level understanding of professional development. I will also document that there is support in the literature for district-level analyses.

Lack of district-level understanding of professional development

Much of a teacher's professional development takes place in the school district or is somehow influenced by district-level decisions and policies (Casserly, 2002; L. Desimone, Porter, Birman, Garet, & Suk-Yoon, 2002; R. F. Elmore & Consortium for Policy Research in Education, 1996; Pam Grossman, Thompson, & Valencia, 2002). Marsh (2000) contends that school districts play a significant role in improving instruction. Understanding how a school district approaches the professional development of its teachers is a stepping-stone to improving the quality of the professional development of a district.

Examples of how the principles of effective professional development have been instantiated are few, and when they are available they tend to focus on a teacher, a group of teachers, or on a professional development program within or across districts, with very little written about a district-level approach. Richardson (2003) suggests a number of reasons that research-proven characteristics of effective professional development are "avoided" including cost, time, the hierarchical nature of the decision making process in schools, and even American proclivities for individualism. Let me expand on Richardson's list by suggesting some additional reasons why accounts of district-wide effective professional development are few.

As Richardson (2003) has noted, the cost of providing effective professional development may be prohibitive. The problem becomes more concrete when we understand that school district resources for professional development range from 3 percent of the total budget (Killeen,

Monk, & Plecki, 2002) to nearly 8 percent (Fermanich, 2002). This does not represent a strong commitment of resources to the professional development enterprise. One might infer that, in comparison to other priorities, district commitment to professional development is not very strong.

A second reason for the lack of literature about comprehensive district-level approaches to professional development is the documented difficulty in sustaining large-scale efforts. The Rand studies of the late 70's showed how difficult it was for local systems to sustain reform initiatives (Berman & McLaughlin, 1974, 1975). Perhaps efforts to attempt comprehensive school district professional development approaches have been tried but have collapsed like many other reform attempts.

A third possible reason for the literature gap is, according to the extensive work on professional development efforts that have been supported by the Eisenhower professional development funds, a lack of coherence in professional development approaches (American Institutes for Research, 1999; Birman et al., 2000; L. Desimone et al., 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001). Professional development that is supported by school districts is often diffuse in focus as evidenced by the large variation in professional development experiences among teachers in the same school. Casserly (2002) cites one school district that had as many as 18 different reading programs. One can only imagine the divergence of professional development activities that are aimed at the implementation of so many reading strategies. It is atypical for school districts to develop comprehensive professional development plans guided by a coherent instructional vision.

Importance of school districts to educational change

Despite the difficulties of developing comprehensive approaches to professional development, there is evidence that school districts are of primary interest in efforts to improve instruction.

According to Casserly (2002), school districts that increased achievement at rates faster than the average of the states in which they were located were found to have comprehensive and coherent professional development. Grossman, Thompson, and Valencia (2002) suggest that districts play a role in shaping the notions of beginning teachers. Elmore (1996) notes a number of reasons why the school district is an appropriate level of focus for understanding professional development:

1. Districts can achieve economies of scale in acquiring the services of consultants.
2. Districts can introduce strong incentives for principals and teachers to pay attention to the improvement of teaching in specific domains.
3. Districts can create opportunities for interaction among professionals that schools might not be able to do by themselves.
4. They can make creative use of multi-pocket budgeting to generate resources to focus on instructional improvement.

Elmore's last point is corroborated by more recent work of researchers who found that among other factors, co-funding of professional development was a predictor of higher quality professional development efforts (American Institutes for Research, 1999).

Further support for a district-level approach to understanding professional development comes from the work of Desimone, Porter, Birman, Garet, and Suk-Yoon (2002), who write:

Given the empirical support we found in our national sample of Eisenhower-supported districts for the importance of district capacity, and the complexity of understanding its

effects in different contexts, as indicated by the case-study research, the issue of district capacity is one that should be closely monitored in future research. More information is needed on the characteristics and conditions that give some districts the capacity to provide high-quality professional development and the mechanisms available to build and strengthen such capacity. Results reported here are a start (p. 1300).

The concept of district capacity is noted by others writing more generally about school districts and their impact on change (Duffy et al., 2000). In her review of district relationships with states, schools, and communities, Marsh (2000) calls for descriptive research about how districts mobilize and activate resources of capacity building. Spillane and Thompson (1997) suggest that local capacity to “support more ambitious instruction” (p. 185) is comprised of human and social capital and resources.

The school district as a focus of inquiry for improving instruction is a neglected but important arena. This study will explore the components and relationships of the professional development system of one school district.

As an analysis framework for understanding the components and relationships of professional development efforts, this study employs a systems perspective. Elaborated more fully in the literature review, the systems perspective is an analytical tool appropriate for understanding complex patterns of relationships. These patterns of relationships are described as systems. The professional development patterns of one school district will be described as a professional development system.

Significance

The value that this study will add to the understanding of professional development in K-12 contexts is two-fold. First, as noted earlier, a greater general understanding of professional development at the district-level is needed. Second, applying a systems perspective to analyze the professional development efforts is a new approach to thinking about professional development. Taken together, the district-level approach and the systems perspective will

provide insights necessary for successfully designing and implementing sustainable professional development that effectively improves instruction and subsequently improves student achievement.

If the value I propose above is realized, socially significant benefits will accrue from this study. If by improving instruction through professional development, students learn more and better, this study could prove very significant. This study will be conducted with the belief that not all possibilities for improving education have been tried. Implicit in this belief is the idea that a greater understanding of the professional development efforts of a school district as a system will provide unique and necessary insights for leveraging district-level improvements to improving instruction through professional development.

It also seems necessary to state here what this study is not. I am not marketing some educational nostrum. I have tried not to stretch the potential benefits of this study. The easy educational solutions have been attempted; what lies ahead is the messy work of improving education through approaches that move beyond outward, short-term change, to approaches that address the core structures that constrain progress. This study is my attempt to walk that path.

Context

This study seeks a deep understanding of a professional development system situated in the Midwestern town of Dresden¹ and its surrounding communities including Dresden Center. Positioned within a 2-3 hour drive of several large cities, Dresden and the adjacent town of Dresden Center combine for a population of 16,000 (U.S. Census Bureau, 2002).

Served by six in-town elementary schools, the school district also includes four elementary schools in four nearby towns separated from Dresden by farmland. Students who

¹ A pseudonym. All locations and names of participants are pseudonyms.

spend their entire K-12 careers in Dresden's public schools will attend one of ten elementary schools, one of two middle schools, and will be united with the other 400 students in their peer group when they attend Dresden Community High School located on the school system's main campus surrounded by the administration building, a middle school, and an elementary school.

Residents of Dresden and its surrounding communities have a number of educational options beyond the public schools. An elementary Catholic school, a Lutheran K-8 school, several Christian elementary schools of various sizes, and a Christian high school provide alternatives to public education. Estimates put the growing number of students enrolled in private schools at 1000. Many parents in the community have chosen to home school their children. A vocational college and a small denominational liberal arts college round out Dresden's educational picture.

Other than being about eight percent lower than state free and reduced lunch averages and having a smaller minority population than most public schools, Dresden Community School Corporation is in many ways educationally average, spending slightly less per student, graduating about the same percentage, and sending a few more of its students to college than the respective state averages (Indiana Department of Education, 2002).

Study Overview

To review, this study is an attempt to contribute to the understanding of professional development by describing the professional development efforts of a mid-sized school district as a system of relationships that I am calling a professional development system. This study advances the frontier of knowledge about professional development through its focus on a school district as the bounding context of efforts to improve instruction for all students through professional development and through its application of the systems theory and systems thinking

to understand the relationships of the various components of the professional development system. This comes at a time when knowledge of professional development that is effective is extensive but knowledge of how to leverage effective professional development into large-scale benefits for students is limited.

The call to *leave no child behind* implies that in the past some have been left behind. Clearly, meeting the needs of the nation's students is complex and difficult. Improving instruction is, in my view, the factor most likely to help the nation meet the challenge to *leave no child behind*. Important to improving instruction is the professional development of all teachers, thus the need for an understanding of the how school districts currently distribute the resources available to them and how districts make decisions about how to improve instruction through professional development. Only a holistic understanding of the complexity surrounding professional development will allow us to move beyond knowledge of principles to the sustainable application of the principles for the benefit of children.

Chapter II: Literature Review

Introduction

To connect this research to the knowledge that has come before it is necessary to consider several literature bases. An obvious beginning point for the literature review is the professional development literature. Literature about systems theory and systems thinking is also important to this study focusing on professional development as a system. Although limited in scope, literature that suggests the significance of the confluence of these fields of knowledge will also be discussed.

Professional Development Literature

The definition of professional development is considered first. The main portion of this section titled “What we know about professional development” follows and is broken into two parts: *what professional development is like* and *what professional development should be like*. This section concludes with an observation about how teachers and teaching are perceived vis-à-vis traditional and progressive modes of professional development.

Definition

I define professional development as:

Teacher-oriented activity with the primary purpose of improving instruction.

To ground this definition it is necessary to discuss two questions. First—What terms are used synonymously with professional development? Second—How is professional development defined in the literature?

Synonyms. In addition to the term professional development, staff development and teacher development may be used to refer to *teacher-oriented activity with the primary purpose of improving instruction*. Sometimes the synonym *growth* is used instead of *development* in these

descriptors. More narrowly, teachers identify in-service workshops with professional development, as these events are the most common incarnation of experiences design for professional growth.

In the recent literature, professional development is the popular term used to describe *teacher-oriented activities with the primary purpose of improving instruction*. Speck and Knipe (2001) suggest that the 1980's saw the emergence of *professional development* (rather than staff development) as a term that some preferred for its emphasis on teaching as a profession. In contrast to Speck and Knipe, Fenstermacher and Berliner (1985) claim that staff development was the buzzword for that decade. In my view, staff development seems more burdened with the baggage of traditional approaches to teacher growth including the one-time workshop, while the term professional development seems to resonate more with the contemporary notions connecting the profession of teaching to the professionalism of other careers. Others do not necessarily espouse this distinction that I am making here and continue to use the terms *staff development* and *professional development* interchangeably (Richardson, 2003). I prefer professional development to staff development and use it consistently throughout this study except when it is necessary to refer to the work of others in this field. Professional development is not the sole province of K-12 education. In referring to professional development throughout the study, I am speaking of the professional development of K-12 teachers.

Definitions in the literature. Evans (2002) notes that the study of teacher development (her term) has been impoverished by a lack of conceptual clarity. She notes that many contributors to the teacher development literature fail to define what they understand the concept to mean. In her article, *What is Teacher Development?*, Evans (2002) urges that if the study of

teacher development is going to advance, researchers must move beyond implicit definitions of the construct of teacher development to explicit definitions.

A number of definitions of professional development have been advanced. In *Bridging the Gap Between Standards and Performance*, Elmore (2002) says, “professional development is the set of knowledge—and skill—building activities that raise the capacity of teachers and administrators to respond to external demands and to engage in the improvement of practice and performance” (p. 13).

According to Evans (2002), professional development is “the process whereby teachers’ professionalism and/or professionalism may be considered to be enhanced” (p. 131).

Speck and Knipe (2001) suppose that, “professional development is a lifelong collaborative learning process that nourishes the growth of educators both as individuals and as team members to improve their skills and abilities” (p. 4).

Writing in the mid 1980’s, Fenstermacher and Berliner (1985) take the position that, “staff development is defined as the provision of activities designed to advance the knowledge, skills, and understanding of teachers in ways that lead to changes in their thinking and classroom behavior” (p. 283).

Some interesting work in defining professional development has been done by researchers attempting to ascertain the fiscal commitment of school districts to professional development. The definitions above were used to broadly define the construct of professional development. Although similar, the definitions below were used as a basis for calculating professional development expenditures in school districts.

According to Fermanich (2002), professional development is, “[A]ny activity designed to contribute to teachers’ professional growth and instructional improvement” (p. 32).

Quoting the U.S. Census Bureau, Killeen and her colleagues (2002) define professional development as “Supervision of instruction service improvements, curriculum development, instructional staff training, and media, library, audiovisual, television, and computer-assisted instruction services” (p. 31).

Odden, Archibald, Fermanich, and Gallagher (2002) provide a somewhat circular definition: “Effective professional development is defined as professional development that produces change in teachers’ classroom-based instructional practice, which can be linked to improvements in student learning” (p. 53).

One area of school-based research that has grappled with the definition of professional development is the literature of school finance. Researchers have attempted to determine how much money is spent on professional development, a task that has been difficult because of the variety of funding sources used to support it within a school district and because there are varying opinions of just what activities and services to include in the formula (Odden et al., 2002). The fairly parsimonious definition provided by Fermanich (2002) was broadly interpreted to include collaboration time made possible by scheduling teacher preparation periods at the same time of the day—a stretch in my opinion. Killeen et al. (2002) embraced a governmental definition of instructional support that included costs from improvement of instructional services (costs most would see as typical including expenditures for workshops and helping instructors to learn new classroom techniques) and educational media services (costs not typically associated with professional development including costs incurred by the preparation of materials for instructors to use as well as the costs of personnel involved in such work).

As is evident above, definitions serve those doing the defining. Certainly teachers improve their instruction in ways and beyond those occasions that their employers provide for

their betterment. Teachers do not necessarily wait for money to be spent by the school district before they improve themselves. In fact, as Jenson, Lewis, and Smith [, 2002 #776] remind us, what professional development “most often means for teachers is their ‘volunteering’ their own money and time before, after school, during lunch, on weekends, and over the summer” (p. 493).

Despite the complicated nature of defining professional development, common to most definitions is the agreement that *instructional improvement* should be the result of professional development efforts. However, determining the relative worth of one professional development effort compared to another in terms of its effectiveness in improving learning is a task best left to large-scale studies (American Institutes for Research, 1999). The return on investment (ROI) approach to evaluating professional development is likely to gain attention in the present climate of heightened accountability.

It is not the primary concern of this research to establish a clear financial picture of professional development. In light of the definitions from the literature, my definition of professional development, *a teacher-oriented activity with the primary purpose of improving instruction*, is reasonable and useful for the current study. Beyond this general definition of professional development, it is less important to take a firm stand about what lies within the framework of the professional development definition or formula and more important to understand how the broad definition offered above is interpreted and implemented locally. Bredeson (2003) says it nicely:

Is it possible that reading a book, listening to a lecture, observing a colleague teach, conducting an action research project, and reflective journaling are all professional development activities? If the activity presents a learning opportunity that engages

educators' creative and reflective capacities in ways that strengthen their professional practice, the answer is an unequivocal, Yes! (p. 37).

This is a more elaborate version of the definition of professional development that I have offered: *a teacher-oriented activity with the primary purpose of improving instruction*. In this study, the definition that I have proposed will be interpreted broadly. I am interested in including all teacher-oriented activity *intended* to improve instruction no matter how formal the channels or processes by which such activities occur.

What we know about professional development

What we know about professional development can be divided into two parts: *what professional development is like* and *what professional development should be like*. In speaking of these two areas I will refer to the current state of professional development as *traditional professional development* and will refer to what professional development should be like as *progressive professional development*. Using the terms *traditional* and *progressive* is a choice of utility. The term *traditional* carries the idea of “an inherited, established, or customary pattern of thought, action, or behavior,” according to the Merriam Webster dictionary. Traditional professional development, then, is of a type that is rooted in past ways of doing things that continue to the present.

The Merriam Webster dictionary defines *progressive* as “making use of or interested in new ideas, findings, or opportunities.” Progressive professional development, then, carries a sense of the newness of the ideas about professional development. The word *progressive* also has special meaning in education. Merriam-Webster further defines *progressive* as “of, relating to, or constituting an educational theory marked by emphasis on the individual child, informality of classroom procedure, and encouragement of self-expression.” As I will show in the discussion

that follows, the child-centered denotation and connotations of the term progressive apply to progressive professional development, which tends toward a teacher-centered mindset.

Those writing about professional development do not constrain their comments to traditional or progressive professional development. Typical in an article discussing professional development is comment on *both* traditional and progressive professional development. Those knowledgeable about professional development often write about the progressive variety by way of exposing the inadequacies of traditional forms. After discussing traditional and progressive professional development, I will show that one of the key differences between the two is how each views teachers and teaching.

What professional development is like

Much of the current writing about professional development compares the old and new approaches. In fact, Guskey (1997) notes that reviews of professional development literature reveal far more problems than solutions.

Loucks-Horsley et al. (1998) refer to the present state of professional development as *traditional*, noting the inadequacies of these approaches as evidenced by their isolated nature (pockets of innovation), paucity of time and support for learning, and the mismatch between the learning goals and the form of the professional development experience (workshops, courses, and institutes). Traditional professional development, the training-and-coaching model (Xu, 2002), “one-shot” (Papanastasiou & Conway, 2002), or the “in-service mode” (Lieberman, 1995) tends to model the inefficiencies of many classrooms as large groups of teachers are brought together and “professionally developed” in an afternoon. This type of professional development includes, “credit-for-seat time” (Darling-Hammond & McLaughlin, 1995), short, one-time sessions (Darling-

Hammond, 1996; Nelson & Reigeluth, 1995; Shibley, 2001), training or workshops irrelevant to the teachers' contexts, (Lieberman, 1995) and sessions led by experts with little follow-up (Shibley, 2001).

To summarize how traditional professional development opportunities violate what is known about adult learners, Sandholtz (2002) notes that “many professional development opportunities for teachers are mandatory, uniform for all teachers, ancillary to their daily work, and occur only periodically” (p. 816). Bredeson (2003) concurs when he observes, “It is ironic that much of what we know from research about the factors and conditions that promote effective student learning is often ignored when it comes to the adults who work in schools” (p. 44). Lieberman (1993) captures the traditional mindset of professional development when she suggests that the traditional approach to teacher development may cause teachers to think of themselves as targets of change rather than agents of change.

A goal of traditional professional development is that teachers should master additional sets of skills in order to be more efficient and effective in their classrooms. Little (1993) states: “The dominant training model of teachers' professional development—a model focused primarily on expanding an individual repertoire of well-defined and skillful classroom practice—is not adequate to the ambitious visions of teaching and schooling embedded in present reform initiatives” (p. 129). Noting the skill-oriented approach to professional development, Little (1993) suggests that “the well-tested models of skill development, built on the staff development and implementation-of-innovations literatures, will work reasonably well to introduce those aspects of reforms that are technical or that can be rendered as a repertoire of classroom practices” (p. 132).

There is little that appeals in the traditional view of professional development. The complexity of educational demands certainly requires something beyond an individual proficient in one technique or another. The exigencies of the classroom require a reconception of what it means to be effective. Despite the obvious shortcomings of professional development in the past, current studies indicate that the rhetoric of what professional development should be like has far surpassed any attempts to implement the principles of effective professional development called for by so many. In fact, in a recent large-scale study, four of five teachers reported that their professional development was of the traditional form (Birman et al., 2000).

What professional development should be like

Although discussions of paradigm shifts have prevailed upon us for some years, when speaking of the paradigm shifts in education we must still speak of them in a future tense. While it is difficult to deny that the information age (Toffler, 1980) is upon us, and while it is possible to note the present educational foment (accountability, school choice, teacher accreditation), education is in no danger of change of a paradigmatic nature. By extension, the same is true of professional development. Are there examples of professional development that mount serious challenges to traditional approaches and that perhaps point the way to a brighter educational future? Yes. Are such changes endemic? No. As mentioned in the introduction of this chapter, what we know of effective professional development comes by way of limited, episodic studies. And, as has been noted, the knowledge that we have gained from such important work is not widely applied. Professional development literature that proclaims changes of a paradigmatic nature conflates future hopes with the prevailing present condition.

The extensive literature detailing what progressive professional development should be like is divided into three subsections. First, we will consider, in broad strokes, what professional

development should be like. We address the question, “If professional development was to undergo a paradigm shift, what would it look like?” Secondly, we will consider at length what the literature identifies as principles of progressive professional development. This section concludes with a discussion of research that attempts to make some sense of the lists of professional development principles by proposing which of the elements in the lists are the most critical if effective professional development is to occur.

The new (future) paradigm of professional development. Professional development is at the forefront of educational consciousness. Where in the past policy makers were more interested in reforming teachers, new conceptions of professional development regularly place teacher development as the instrument of school reform. Richardson (2001) captures the mindset of professional development as *reform of teachers*: “The more traditional form of staff development,” she writes, “begins with someone outside the school determining that a process, method, or system should be implemented in classrooms” (p. 917). Noting the strengthening link between school reform and the professional development of teachers, Elmore (1996) notes, “There is growing consensus among educational reformers that professional development for teachers and administrators lies at the center of educational reform and instructional improvement” (p. 2). “Reform of professional development,” prophesies Sykes (1996), “and reform as professional development are the dual generative themes of the future” (p. 467). These and others (Arey, 2002; Lieberman, 1995; Little, 1993; Stein, Smith, & Silver, 1999; Supovitz, 2002) consistently link school reform with the professional development of teachers. Even the new accountability legislation recognizes the significance of high quality teaching and professional development as a means to its end of adequate yearly progress (U.S. Department of Education, 2002).

Bredeson (2003), in his book, *Designs for Learning*, suggests that the magnitude of change needed in professional development efforts is that of a paradigm change:

Redesigning professional development into a new architecture for career-long growth and development in schools will not be easy. Everyone is in favor of improvement in professional development; it is changing professional development as they know it that bothers them. Changing the paradigm requires rethinking, restructuring, and reculturing professional development . . . Changing the paradigm of professional development requires a vision of where we want to be and what it should look like (p. 17).

In this passage, Bredeson amplifies Sykes' notion (1996) that in order for professional development to serve as a tool of school reform, it must undergo radical change.

Teacher change, what professional development is all about, has traditionally involved developing a well-conceived plan supported by research-proven practices. Those who developed the plans hoped that teachers would then realize the logic of the proposed changes and subsequently alter their classroom practices. However, changing teacher practice has never been that easy. Even though many attempts have been made to change teachers and what they do in their classrooms, teacher practice, when assaulted by such approaches has consistently been “change resilient.” Richardson and Placier (2001) clarify the changes that need to take place in order to surmount the traditional approaches to teacher development and change.

Richardson and Placier (2001) discuss teacher development and change in view of three change models (rational-empirical, normative-reeducative, and power-coercive) offered by Chin and Benne in *The Planning of Change* (1969). Richardson and Placier situate most of the teacher change literature in the category of empirical-rational change. Efforts to change teacher practice under empirical-rational approaches involved identifying best practices to be used in the classroom and telling teachers how to implement such strategies. Richardson and Placier contrast the empirical—rational approach with the normative—reeducative approach which, they note, is “enhanced through deep reflection on beliefs and practices.” They indicate that the

major difference between the empirical—rational and normative—reeducative approaches is the locus of the impetus for change. Within the empirical—rational model the impetus for change comes from external sources, while in the normative—reeducative model, the impetus is centered in internal sources. In the conclusion of their chapter in the *Handbook of Research on Teaching*, Richardson and Placier (2001) take a stand for the normative—re-educative approach to teacher development: “[M]ajor and sustainable changes in education probably require a normative—reeducative approach to change. Many of the forms being called for today. . . require deep changes in content and pedagogical knowledge and in understandings about schooling, teaching, and learning” (pg. 938).

In a different but parallel type of thinking, Schön (1983) exposes the limits of what he calls *technical rationality*. He observes that professions have typically relied on a “systematic knowledge base” that is 1) specialized, 2) firmly bounded, 3) scientific, and 4) standardized. The standardization of practice is in keeping with the empirical-rational approach to change. Schön further observes that technical-rational approaches to solving problems promote *problem solving* over *problem setting*. Perhaps this is one reason that the knowledge base of professional development has not been leveraged—perhaps the uniqueness of the local context has been overlooked or ignored.

Schön eloquently identifies the tension between the rational-empirical and normative-reeducative approaches to change—a tension he terms a “dilemma of ‘rigor or relevance’”. He writes:

In the varied topography of professional practice, there is a high, hard ground where practitioners can make effective use of research-based theory and technique, and there is a swampy lowland where situations are confusing “messes” incapable of technical solution. The difficulty is that the problems of the high ground, however great their technical interest, are often relatively unimportant to clients or to the larger society, while in the swamp are the problems of greatest human concern. Shall the practitioner stay on

the high, hard ground where he can practice rigorously, as he understands rigor, but where he is constrained to deal with problems of relatively little social importance? Or shall he descend to the swamp where he can engage the most important and challenging problems if he is willing to forsake technical rigor?" (p. 42).

In the terrain between the hard, high ground and the muddy swamp lies the path from empirical-rational approaches to professional development (the high ground) to the lowlands of practice that require normative-reeducative approaches to professional development. A real paradigm shift in professional development will be upon us when, as a rule, professional development techniques recognize the complexity of teacher practice and support continuous transformation of that practice towards the goal of improving instruction.

Principles of progressive professional development. In light of the proposed but yet unrealized paradigm change for professional development, the traditional approaches outlined earlier come up short. Sea changes are needed in the way professional development is conducted and more importantly in the underlying assumptions and philosophy on which traditional approaches are founded. Beyond the broad generalities of paradigm shifts and all that they might entail, the professional development literature is awash with principles to guide new designs for teacher growth. This segment provides a sampling of these lists with brief commentary on each.

Richardson and Placier (2001) list the following principles of professional development from their review of the literature:

- The program should be school wide and context-specific.
- School principals should be supportive of the process and encouraging of the change.
- The program should be long-term with adequate support and follow-up.
- The process should encourage collegiality.
- The program content should incorporate current knowledge obtained through well-designed research.

- The program should include adequate funds for materials, outside speakers, and substitute teachers so that teachers can observe each other (p. 917-918).

Although these principles of professional development are a distillation of what the literature suggest, Richardson and Placier connect them to empirical-rational approaches to changing teacher practice. Following the presentation of this list they say, “Recent empirical-rational staff development processes focus on ways of thinking and teacher action rather than on behaviors. They use [seek to implement] as many of the qualities [the principles of professional development] mentioned above as possible” (p. 918). It is interesting that Richardson and Placier see these professional development approaches as serving change approaches that they think to be ineffective. I will return to this point later when I discuss how differences in traditional and progressive professional development may be understood on one level as differences in views of teachers and teaching.

Hawley and Valli (1999) present a list of design principles for effective professional development in their chapter in the Darling-Hammond and Sykes (1999) book *Teaching As the Learning Profession*. Describing the principles of professional development that they have seen in the literature as “remarkably congruent,” Hawley and Valli present their distillation as a set of eight principles. According to them, professional development should:

- Be driven, fundamentally, by analyses of the differences between (1) goals, and standards for student learning and (2) student performance.
- Involve learners (such as teachers) in the identification of their learning needs and, when possible, the development of the learning opportunity and/or the process to be used.
- Be primarily school-based and integral to school operations.

- Provide learning opportunities that relate to individual needs but remain primarily organized around collaborative problem solving.
- Be continuous and ongoing, involving follow-up and support for further learning, including support from sources external to the school.
- Incorporate evaluation of multiple sources of information on outcomes for student and processes involved in implementing the lessons learned through professional development.
- Provide opportunities to develop a theoretical understanding of the knowledge and skills to be learned.
- Be integrated with a comprehensive change process that deals with the full range of impediments to and facilitators of student learning.

The value that this list adds to the present discussion is that it is presented in terms of five dimensions of learner-centeredness. Drawing on the research of Alexander and Murphey (1998), Hawley and Valli contend that effective professional development must (1) acknowledge a teacher's knowledge base, (2) help teachers reflect and manage their thoughts and behaviors through strategic processing, (3) be sensitive to teacher motivation and issues of affect, (4) realize and provide for the fact that teacher learning is developmental, and (5) be contextually grounded. Hawley and Valli connect each of their eight principles to one or more of these five dimensions of learner centeredness.

Another set of principles comes from Elmore's work (1996) with a school district in New York City. This list is distinguished from others in that it is closely connected to the experience of one school district's successful professional development efforts and thus has a more

pragmatic tone. The organizing principles for professional development in Community District 2 were:

- It's about instruction and only about instruction.
- Instructional change is a long, multi-stage process.
- Shared expertise is the driver of instructional change.
- Focus on system-wide improvement.
- Good ideas come from talented people working together.
- Set clear expectations, then decentralize.
- Collegiality, caring, and respect.

Elmore's praise for the district employing these principles is effusive: "No district I have observed is doing all of the activities in the comprehensive and strategic fashion I have observed in District 2" (p. 3).

In her presentation of professional development principles, Little (1993) contrasts the training model to her principles, each of which challenges certain inadequacies. Little's principles below are given verbatim and the challenges that each poses to the training model are summarized in parentheses.

- Professional development offers meaningful intellectual, social, and emotional engagement with ideas, with materials, and with colleagues both in and out of teaching. (Challenges shallow, fragmented content and passive teacher roles in training model)
- Professional development takes explicit account of the contexts of teaching and the experience of teachers. (Challenges the "one size fits all" approach of the training model.)

- Professional development offers support for informed dissent. (Challenges the absence of evaluation and processing assumptions in the training model.)
- Professional development places classroom practice in the larger contexts of school practice and the educational careers of children. (Challenges the training model's view of curriculum reform as acquiring a set of specific technical skills.)
- Professional development prepares teachers (as well as students and their parents) to employ the techniques and perspectives of inquiry. (Challenges the view that professional development is always about consuming knowledge rather than generating knowledge.)
- The governance of professional development ensures bureaucratic restraint and a balance between the interests of individuals and the interests of institutions. (Challenges the hierarchical structure of the training model in which teachers lack influence.)(p. 138-139).

Little (1993) suggests that the “sheer complexity,” the inertia of the way professional development has always been done (the training model), and “the relative inattention to teachers’ opportunity to learn within the salaried workday and work year” (p. 139) are the dominant challenges to the implementation of the principles she suggests.

Based on her research about professional development as part of school university partnerships, Sandholtz (2002) offers a set of recommendations for designing professional development that she terms “pivotal yet practical.”

- Redesign school and district in-services.
- Offer multiple and varied opportunities.
- Focus on teachers teaching teachers.

- Promote personalized professional development plans.
- Provide time and support for professional development.

Though Sandholtz's list may seem more common place than previous lists, she also positions *teacher learning* as being the primary focus of progressive professional development.

Focusing on the professional development of math and science teachers, Loucks-Horsley et al. (1998) echo some of the above principles and add some of their own. According to their paraphrased principles, professional development programs should:

- Be driven by a well-defined image of effective classroom learning and teaching.
- Provide opportunities for teachers to build their knowledge and skills.
- Use or model with teachers the strategies teachers will use with their students.
- Build a learning community.
- Support teachers to serve in leadership roles.
- Provide links to other parts of the educational system.
- Continuously self-assess and make improvements.

This anthology of professional development principles illustrates several points. First, while this list may not be exhaustive, it is comprehensive. Second, common threads are evident, yet it seems each list of principles shades professional development in a way that has different nuances and meanings for professional developers. Third, it is easier to generate lists of principles than to cite examples of successful implementation of the principles.

A realistic response to the lists above could be—So what? We know about all these principles and know that, in the main, they are not exerting a strong influence on the professional development experiences of teachers. Little (1993) captures this dilemma: “There is no well-developed picture,” she laments, “of what these principles look like in practice” (p. 131). Recent

research by Garet, Porter, Desimone, Birman, and Suk-Yoon (2001) on a national sample of professional development programs has yielded a model that relates some of these professional development principles to each other.

Key principles of effective professional development. Garet et al. (2001) found six factors that contribute to the effectiveness (positive change in the practice of secondary science and math teachers) of professional development. In a model based on a national data sample of professional development supported by the Eisenhower Professional Development Program, researchers identified three structural features and three core features that contribute to effective professional development (See Table 2.1).

Table 2.1 Key Features of Professional Development

	Components	Description
Structural	Form	Reform vs. traditional (Study groups or networks vs. workshops or conferences).
	Duration of experience	Number of hours and span of time.
	Collective participation	Participation by established groups (same school, grade, department vs. educators from various schools).
Core	Content focus	Professional development aimed at increasing disciplinary knowledge.
	Active learning	Meaningful analysis of teaching and learning (examining student work, getting feedback on teaching).
	Coherence	Degree of consistency between professional development and teachers' goals, standards and opportunities for continued professional communication.

Based on Garet et al. (2001)

Structural features of effective professional development experiences include form, duration, and collective participation. Structural features that establish the context for effective professional development are reform-oriented activities that encourage collective participation

and involve significant amounts of time over an extended period of time. To the surprise of these researchers (L. M. Desimone et al., 2002), later data analysis challenged the significance of duration (contact hours and time span) as a factor of effective professional development. This is an interesting and peculiar finding and bears further investigation since it runs counter to all of the contemporary wisdom on effective professional development.

Core features of effective professional development are a focus on content, active learning opportunities, and coherence. When structural components of professional development are in place, they create a context friendly to the core components of professional development. The core features lead to change in knowledge and skill and ultimately to change of practice. The work of Garet et al. (2001) is certainly not the final word on professional development in K-12 settings but does provide a coherent explanation of the relationships of professional development widely encouraged in the literature. As such, the model provides rationale and guidance for those making research-grounded decisions about designs of professional development experiences.

It is important not to overstate the importance of the Garet et al. study. Little (1993), commenting on the propensity for grasping at success stories as models to be widely implemented, warns that, “no matter how persuasive the precedent set by any success story, broad principles require close attention to each local context” (p. 131-132). The findings of Garet et al. are not a recipe for professional development success. The value of the research is that it helps us to understand which principles (among the many offered to guide designs for professional development) principles have the most promise for changing teacher practice. A further benefit is the model that suggests relationships among the principles. Their work is an important step forward, but more work needs to be done.

Two views of teachers and teaching

I have presented a review of professional development in terms of what it is like and what it should be like. However, I believe we would be missing an important point if we did not pause to consider the very different perspectives that traditional and progressive professional development approaches have towards teachers and teaching. Underlying the traditional and progressive approaches to professional development are practical and philosophical differences in how teachers and their work are perceived. The views of teachers as technicians is the basis for some professional development approaches while a view of teachers as intellectuals scaffolds other professional development approaches. Knowing the difference between the two may not be as simple as distinguishing between traditional and progressive approaches to professional development.

Technical and intellectual views of teaching defined. Many have noted the important distinction between the technical and intellectual views of teaching but have used different terms to discuss it. Harmonizing with the technical view of teaching is professional development that is instrumental (R. Elmore, 2002), teachers as recipients of change (Day et al., 2002), teaching as a prescriptive list of behaviors (Kagan, 1988), teaching as routine work (Lasley et al., 2002), teaching as routinized labor (Owens, 1991), and teaching as acquiring a set of proven techniques (Slavin, 2001). Professional development practices that have been identified in this review as *traditional* are largely consonant with the technical view of teaching.

Palincsar (1999) states eloquently the differences between technical and intellectual views of teaching. She writes:

[If] one assumes a technical view of the activity of teaching, then the role of the teacher is to learn the skills of effective teaching and how to apply them to practice. From the technical view, professional development is regarded as a vehicle for transmitting skills to teachers, rather than as a process for collaborative inquiry and the teacher has no role

to play in the generation of knowledge. In contrast to the technical view is the perspective that teaching is an intellectual activity that hinges on the ability to reflect on and make decisions about practice. From this perspective, teachers play a participatory role in the creation and use of knowledge in the field. The teacher herself develops theories in order to interpret, understand, and transform her practices. (p. 272).

Supporting the ideas outlined by Palincsar are other descriptions of the intellectual view of teaching. These include a learner-centered view of teaching (Darling-Hammond & McLaughlin, 1995), teaching as an art and an “integral performance” (Kagan, 1988), teaching as highly complex work (Lasley et al., 2002), and teaching characterized by sustained inquiry (Supovitz, 2002). The intellectual view of teaching is largely consonant with progressive professional development.

An intellectual view of teaching

Little (1993) offers this description of teaching as an intellectual activity, “The most promising forms of professional development engage teachers in the pursuit of genuine questions, problems, and curiosities, over time, in ways that leave a mark on perspectives, policy, and practice”(p. 133). Lasley, Bainbridge, and Berry (2002) call the space between the intellectual and technical view of teaching an “ideological divide.” King (2002) urges professional development that promotes an inquiring stance toward teaching where “professional development that promotes inquiry will involve teachers in determining content and process, will relate specifically to their students, will be sustained and systematic, and will entail active learning that may lead to important changes in beliefs and practices”(p. 244).

In discussing the essential aspects of a professional community of teachers, Grossman, Wineburg, and Woolworth (2000) argue that improvement of instructional practice and continuing intellectual development are necessary for true teacher community. They elaborate:

As lifelong learners, teachers must continue to grow in knowledge, breadth, and understanding and keep up with changes and paradigm shifts in their disciplines. The vision of the teacher as exemplar of the lifelong learner is central in classical

formulations of teaching, a fact that is preserved in languages as diverse as Chinese, Hebrew, and Norwegian, in which the word for “teacher” is the interactive [sic], or intensive form, for learner (p. 14).

Speaking of communities of instructional practice, Supovitz (2002) bridges the tension between the technical view of teaching and the intellectual view. Communities of instructional practice, in his view, require 1) collaborative preparation for instruction, 2) times of teaching together, and 3) flexible and purposeful regrouping of students to take advantage of teacher and small group strengths. He says: “These practices are emblematic of an ongoing exploration into what improves student learning. These kinds of practices are more than just changes in the tasks that teachers perform [technical view]; they are transformations in the way teachers engage in their work and with each other around instruction [intellectual view]” (p. 1617).

Transformation is a recurrent theme in the literature that also contrasts with professional development of the past. According to Caine and Caine (1997), “There is a fundamental difference, however, between acquiring new strategies and changing one’s world view. The first is closer to being trained; the second involves transformation” (p.225). Professional development consistent with the technical view of teaching helps teachers to *form* new practices. Professional development consistent with the intellectual view of teaching assists teachers in *transforming* practice to best meet the needs of their students. Duffy et al. (2000) advocate the view of teaching as knowledge work. In this view, “Teachers literally create the knowledge they need to enhance teaching and learning” (p. 29). No matter what the terms used, whether knowledge work or transformation, much of the professional development literature seems to be calling for an intellectual view of teachers.

Why These Views Matter

If traditional professional development urges a technical view of teaching and progressive professional development urges an intellectual view of teaching, why is the

technical/intellectual distinction so important? There are two reasons for the importance of the distinction.

First, I believe that one of the reasons that a professional development paradigm change has been so slow in coming is because underlying the progressive principles for designing professional development is the notion that the work of teachers should be intellectual. I think that it is not unreasonable to conclude that this very different way of viewing teachers and teaching is one reason why many efforts to initiate change in professional development have faltered. An intellectual view of teaching requires a certain autonomy and trust in the professionalism of teachers that the current system finds difficult to allow.

The second reason that the technical/intellectual distinction is worth noting is that sometimes contemporary and modern professional development is conflated with progressive professional development. Not all that is new in the rhetoric of professional development is necessarily progressive. Underlying some professional development that seems to be progressive is the enduring view that teachers are technicians. I believe that this was observed by Richardson and Placier (2001) who noted even the new ideas about what works in professional development may fall squarely into the traditional camp, or may as they point out, serve the interests of professional developers in the empirical-rational tradition.

This is not to say that technical skills are unimportant to or beneath teachers. However, if skill acquisition and execution of teaching techniques is the upper limit of a teacher's professional development, much is lost. What is lost in this focus on the technical aspect of teaching are the benefits of pedagogy grounded in teacher learning, renewal and inquiry—things not emphasized in the technical view of teaching.

I think that while some of the current literature seems to harmonize with an intellectual view of teaching, in fact, it is dissonant. One example of current professional development dissonant with the intellectual view of teaching is the call for alignment of professional development with standards. In light of the new accountability measures bearing down on all public educators, alignment of everything including professional development with standards is seen as an imperative. I think that this can nourish both a technical and intellectual view of teaching. It will be technical if choices of instructional practices are unnecessarily limited to produce a standardization of practice where teachers are little more than automatons carrying out the orders of their instructional programming. Alignment of practice with standards can be a professional and intellectual activity if teachers are encouraged to explore and develop effective classroom practices that meet the needs of their students.

Another example of technically oriented professional development masquerading as contemporary and intellectually oriented professional development is the push for best practices. Without a lengthy discussion of the merit of any of these so-called best practices, the problem is not that the practices are not effective—at least in some contexts. The problem comes in the shallow thinking that, if we can simply identify a list of best practices and implement them, we will have the education we have always wanted.

Summary of the Professional Development Literature

Professional development--*teacher-oriented activity with the primary purpose of improving instruction*—is a hot topic in K-12 education. There are two basic approaches to professional development: traditional and progressive. While the traditional mode of professional development is firmly entrenched, some are proclaiming a new era for professional development. Evidence of this new era comes in the form of lists of principles about how

professional development should be designed. Some of these lists of principles arise from research on cutting-edge work with real teachers in real classrooms.

It is impossible to declare that this is the dawn of a new era in professional development because that would assume a certainty about the progress to be made, and although the signs are promising, we do not have enough evidence of effective professional development on a wide scale to declare that the darkness of traditional professional development has ended.

This section of the literature review concluded with a consideration of professional development in terms of what it means to teach. It was suggested that embedded in truly progressive notions of teachers is an assumption or view that teachers are intellectuals involved in complex work. This view rejects the techno-rationality found in the traditional approaches to professional development and embraces the reflection-in-action ethic (Schon, 1983).

The next section of the literature review examines systems theory, its application to education, and the possibilities that this analytical tool offers for understanding problems of professional development.

Systems Literature

As the title of this dissertation indicates, I am looking at professional development from a systems perspective. In this section of the literature review I will (1) discuss the basic tenets of systems theory and systems thinking and how they apply to education (2) explain how it is possible to think of the professional development efforts of one school system as a subsystem of that system, and (3) explore what educational good may come from the application of systems thinking to professional development.

Systems Theory and Systemic Thinking

Senge (1990) defines systems thinking as, “a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively” (p. 7). Much has been written about systems theory and systems thinking. The application of systems theory and systems thinking to the analysis of problems and designing solutions has become more and more prevalent in popular thinking (Hutchins, 1996). The pedigree of this foundational system of thought is traced to the work of biologist, Ludwig von Bertalanffy, who proposed that “an organism is an integrated system of interdependent structures and functions” (quoted in Owens, 1991). Banathy (1992) relates the evolution of systems thinking to massive societal change and the need for new tools of analysis for understanding the world. He says:

Over the past four to five decades, we have been faced with increasingly more complex and pressing problem situations, embedded in interconnected systems that operate in dynamically changing and turbulent environments. In addressing these problem situations and working with their relevant systems, we have learned to recognize the limitations of the perspectives, methods, and tools of traditional scientific orientation (p. 5).

Systems thinking is seen as an alternative to mechanistic and reductionistic thinking (Banathy, 1992; Hutchins, 1996). These linear systems of thought that focus on simple cause and effect cycles are proving to be inadequate tools for analyzing the complex problems of the present. In her book designed to help adults teach the tenets of systems thinking to children, Sweeney (2001) writes: “Our bodies, families, our schools, our communities, these are all systems. By understanding how they work. . .we can deal more effectively with the increasing complexities of everyday life” (p. 8).

Researchers and theorists are beginning to apply the principals of systems thinking to the analysis and design of social systems (Banathy, 1992; P. Senge et al., 2000; P. M. Senge, 1990).

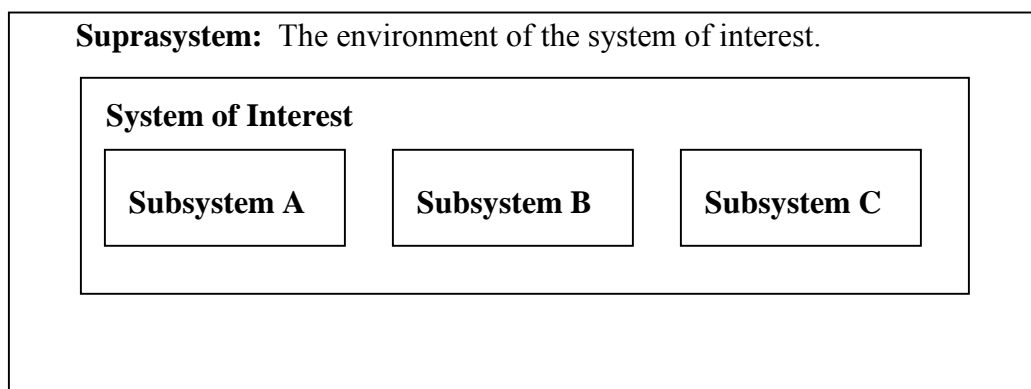
Senge (1990) placed systems thinking in the center of his essential disciplines for learning organizations, calling it the fifth discipline. Senge's later work, *Schools that Learn* (P. Senge et al., 2000), applied systems thinking to the messy problem of educational reform. Banathy has also been influential in providing an understanding of how systems thought can be part of "disciplined inquiry" in education (Banathy, 1991, 1992, 1996).

While a treatise on systems theory is not the purpose of this review, an outline of key concepts that guide systemic thinking is in order.

Everything Is Connected To Everything

This basic notion is fundamental to the application of systemic thinking. Where, in the past, efforts at understanding focused primarily on reducing everything to the smallest possible part, the systems view seeks to understand the relationships between the parts. This leads the systems thinker to focus on relationships and patterns. Patterns of relationships can be grouped into what systems thinkers call suprasystems, systems, and sub-systems (See Figure 2.1). So, systems are *nested* in larger systems which are themselves nested in still larger systems.

Figure 2.1 Nested Systems



Small Changes Can Have Large and Unpredictable Effects

Included in this axiom is the notion that change in one part of a system affects all the other relationships in the system. Sometimes unintended and unpredictable effects result from

relatively small changes. The ripples resulting from one cause interact with the ripples of other causes to create effects that are the result of multiple causes. When effects produced by multiple causes produce change in surrounding parts and relationships, a complex web of causality is formed and described best by words such as *mutual*, *multiple* and *recursive* (Banathy, 1992). Hutchins states, “The shift in world view to a systems perspective recognized that systems don’t operate in isolation; they are interdependent and connected, and cause and effect frequently aren’t linear” (p. 13). Senge’s (1990) observation that the solutions of the present may create the problems of the future is another way of expressing a new view of causality necessary in systemic thinking.

Structure and Function are Intimately Related

Hutchins observes that the structure of a system defines it, that is, the relationships among parts of a system are what make the system the system. The structure of a system dictates or limits its function. In other words, a school system with an administrative hierarchy will operate or function in a top-down way—its function and modus operandi are directly linked to the relationships in the system. The constraints that structure places on function have led to calls for new structures in education—ones that allow for the new and necessary functions that the school systems must carry out. These new and necessary functions include preparing all students to participate in the information age rather than sorting them for the industrial age purposes (Reigeluth & Garfinkle, 1994). Eloquent explanations of this relationship are offered by Covington (Covington, 1996) in *The Myth of Intensification*, by Robert Branson (1987) in *Why The Schools Can’t Improve: The Upper Limit Hypothesis*, and by Tyack and Cuban (1995) in *Why The Grammar of Schooling Persists*. The undeniable relationship between structure and function is leading to calls for change in the basic structure of schools.

Professional Development as a System

According to Senge (2000), the word “system” comes from a Greek word meaning “to cause to stand together” (p. 78). He contends that “the nature of a system includes the perception with which you, the observer, cause the system to stand together” (p. 78). This notion of systems existing in perception is supported by Banathy (1996), who says, “Systems exist as mental pictures in our minds. Saying this another way, systems thinking structures thinking about whatever entity or phenomenon we become aware of and assign meaning to” (p. 156). In other words, applying systems thinking sometimes requires perceiving a set of relationships or circumstances as a system in order to better understand the world. In educational parlance, we know that within a school system, a multitude of relationships occur to accomplish the ultimate goal or goals of the school. All of these relationships are part of systems. In the language of systems theory and systems thinking, systems that operate within systems are called sub-systems (Hutchins, 1996; Owens, 1991). Each sub-system is related to each other sub-system. The system’s subsystems work together to carry out the purposes of the larger system.

Application of Systems Theory To Education

The term “system” is often used to refer to a collection of schools that are geographically related. School districts, corporations, or systems are complex—serving many masters with many goals. Somewhere in the multiplicity of goals is one called “helping students learn.” Helping students learn is achieved to some degree or another by the confluence of a number of sub-systems that carry out a variety of functions necessary to meeting the goal.

The foodservice sub-system operates to carry out the “feed students” function of the school aimed ultimately at helping the school to achieve its larger goal of helping students learn. The transportation sub-system carries out the “get students to school and return them to home”

function—a function quite important to helping a school system achieve its goal of helping students learn. In this same line of reasoning one may conceive of the teacher-oriented activities with the primary purpose of improving instruction as a sub-system focused on the “improving instruction” function of the school. The “improving instruction” function is important to helping school systems achieve the top-level goals—helping students learn.

How Systems Theory Has Been Applied to Education in the Past

This study is not the first to apply systems theory and systems thinking to education. As mentioned earlier, Peter Senge’s book, *Schools That Learn*, applies the thinking in his best-selling book, *The Fifth Discipline*, to the problem of school change. Other researchers have recognized the futility of piecemeal change as evidenced by the many failed reforms that have at one point or another promised to fix what was wrong with education.

Jenlink, Reigeluth, Carr, and Nelson (in press) offer school districts guidance for transforming themselves. This process approach to change represents a key difference between forms of school reform that have come and gone and a new generation of transformational efforts that recognize the importance of changing the core structures of schooling and more importantly the fundamental ways that people think about education.

In a book that outlines Knowledge Work Supervision (KWS) as a school transformation strategy, Duffy et al. (2000) note: “One of the difficulties associated with incremental reform is that schools are notoriously difficult to change a little bit at a time. One major reason for this difficulty is the interconnectedness among various parts of the school organization” (p. 48). “We believe,” they continue later, “that those responsible for planning and implementing systemic change must be systems thinkers” (p. 63). Expanding on what is meant by systems thinkers, they elaborate: “Being a systems thinker means being able to ‘see the forest,’ the overall relationship

of the parts, to predict consequences of planned actions, and to anticipate unintended outcomes. Systemic school improvement requires a conceptual map of the school district as a system” (p. 63). One way of thinking about this attempt to understand the professional development system of Dresden is that it is an effort to make a detailed conceptual map of one sub-system of the larger system called a school district.

Caine and Caine (1997), who took a systems approach to helping two schools in California restructure themselves around understandings of brain-based learning, offer this insight into the importance of understanding structure when there is talk of restructuring education:

[W]e say that “poor results are caused by poor teaching. . .or poor textbooks. . . or an inadequate curriculum,” and so on. If students were not learning enough, we say that they need even more “on-task behavior,” the assumption being that more such behavior translates into better results. We then go about improving or repairing or fixing these defects. Thus in teaching, we contend that the greater the input through hard work, practice, and rehearsal, the greater the result in the form of test scores and grades. We keep focusing on fixing or altering the structure when we really need to understand what keeps the structure in place (p. 37).

While the above citations come from book-length accounts of systems thinking applied to education, the idea of applying systems thinking to problems is also gaining currency in educational journals. A recent issue of *Educational Horizons* was dedicated to the application of systems thinking to problems of special education. A lead article titled “What Is a System and a System Perspective?” (Zera, 2002) summarizes systems thinking succinctly, “Although systems-based theories are not new, only recently have their foundations and assumptions been explored within education literature, ‘Change effects change’ is one of the primary tenets of systems-based theory, also known as complexity, nonlinear dynamics, and Chaos” (p. 18). Zera continues, “Minute changes create additional changes that are not always predictable. It is important to examine the multiple interactions within a system rather than focus on the

individual components” (p. 18). New tools and new ways of seeing are needed to understand the complexity that is education today. Some are turning toward systems thinking as an aid to understanding the complexity and for help in designing solutions and transformations.

Implications of Systems Theory for Understanding a Professional Development System

There is some evidence in the literature that systems thinking is making some inroads into thinking about professional development. The importance of systemic approaches in the area of instructional improvement is being recognized. Elmore (1996) notes the limited number of districts that approach professional development systemically: “[W]hile virtually every school district in the country engages in some kind of professional development, only a very few districts have a serious strategy for using professional development to bring about system-wide changes in instruction.” He adds, “So the study of systemic uses of professional development necessarily involves the study of a handful of specific cases” (p. 3). Wasley (1997) observes the problem of teacher learning in systems language: “Nearly every report on problematic conditions in schooling acknowledges that teachers need time as part of their professional day to learn more about their work. The current structure of schooling does not allow for this, nor do many in local communities see it as integral to the development of children’s capabilities” (p. 64). These quotes illustrate that educators are beginning to view the problems of professional development in systems terms. In this study, I hope to further illustrate the usefulness of systems theory for this important area of educational inquiry.

Three Lenses

One useful way of describing a system is offered by Banathy (1992), who proposes that social systems can be analyzed by constructing three models of the system. These models, or lenses, are the system-environment model, the structure/function model, and the process model.

The system-environment lens explicates the relationship between the system of interest and its environment. The structure/function lens develops a snapshot of the system in terms of its goals, components, structure, and functions. The process model captures the behavior of the system over time, allowing an understanding of the dynamic nature of the relationships uncovered with the structure/function lens. Banathy posits that a meaningful and comprehensive understanding of a system can be attained by looking at the system through all three lenses simultaneously.

In terms of this study, the system of interest is the professional development system of Dresden Community Schools. Understanding this system requires Banathy's three-lens view. For purposes of clarity, I will refer to the three analytical perspectives as lenses, and the descriptions that result from these perspectives I will call models.

The Systems-Environment Lens. From this perspective, key questions about the system of interest are: What are the peer and supra-systems of the system of interest? What are the relationships between and among these entities? What are the boundaries of the system of interest? What does the system of interest influence and what influences it? What are the inputs and outputs? Based primarily on my experience in Dresden as a teacher and as a professional developer and upon my understanding of the professional development literature, I offer short general answers to these questions in Table 2.2 to provide a general sense of how the systems-environment lens is used and how professional development efforts can be described as a system.

Table 2.2 A Professional Development System Through the Systems-Environment Lens

Questions concerning the Professional Development System (PDS)	Answers
What are the peer systems?	<ul style="list-style-type: none"> • Human resources • Technology support • Teacher union

Questions concerning the Professional Development System (PDS)	Answers
	<ul style="list-style-type: none"> • Teaching system • ...
What are the supra-systems?	<ul style="list-style-type: none"> • School District • State Department of Education • Community of Dresden • ...
What are the relationships of these peer systems, the supra-systems and the professional development system?	<ul style="list-style-type: none"> • Human resources and technology support peripherally related to one another and to the PDS. • The PDS is closely related to and affected by its immediate environment, the school district.
What are the boundaries?	<ul style="list-style-type: none"> • Boundary of the PDS is anything that has to do with improving instruction through teacher-oriented activity.
What influences the PDS?	<ul style="list-style-type: none"> • Federal mandates (NCLB) • State legislation • District policy • Teacher contracts • Teacher needs • ...
What does the PDS influence?	<ul style="list-style-type: none"> • May have small effect on district policy. • Teacher practice • Technology infrastructure • ...
What are the inputs?	<ul style="list-style-type: none"> • Time • Money • Knowledge • ...
What are the outputs?	<ul style="list-style-type: none"> • Teacher attitudes, understandings, skills and mental models • Improved instruction/achievement • Secondary effects

Questions concerning the Professional Development System (PDS)	Answers
• ...	

From the systems-environment perspective, the system of interest is perceived as a black box. Attempts to analyze what goes on inside the system are left to the perspectives of the other lenses.

The Structure/Function Lens. A second vantage point for understanding a system is the functions/structure lens. Questions of interest from this perspective are: What are the goals of the system? What functions serve to meet or address the goals? What components carry out the functions? How are the components organized into the structure of the system? The questions that one could use to understand the components, the structural relations of one component to another, and the functions that the components are responsible for and capable of achieving within the structure are shown in Table 2.3.

Table 2.3 A Professional Development System Through the Functions/Structure Lens

Questions concerning the Professional Development System (PDS)	Answers		
What are the system goals?	Could be same as the mission statement of the school		
What are the system functions?	<ul style="list-style-type: none"> • Keep abreast of research • Maintain records of expertise in the system • Analyze teacher needs • Train teachers • Create new knowledge • Disseminate new knowledge • Allocate resources • ... 		
What components carry out the functions?	<table border="0"> <tr> <td data-bbox="618 877 1036 1052"> <ul style="list-style-type: none"> • Assistant superintendent • Professional developers • Principals • Support staff </td> <td data-bbox="1040 877 1338 1178"> <ul style="list-style-type: none"> • Workshops • Presentations • Periodicals, books and videos • Observations of teaching • ... </td> </tr> </table>	<ul style="list-style-type: none"> • Assistant superintendent • Professional developers • Principals • Support staff 	<ul style="list-style-type: none"> • Workshops • Presentations • Periodicals, books and videos • Observations of teaching • ...
<ul style="list-style-type: none"> • Assistant superintendent • Professional developers • Principals • Support staff 	<ul style="list-style-type: none"> • Workshops • Presentations • Periodicals, books and videos • Observations of teaching • ... 		
How are components organized into a system structure?	<ul style="list-style-type: none"> • By title, the superintendent is in charge of professional development and oversees the professional development efforts of the entire district. • Professional development positions are an arm of the administrative function of the schools. • The work of principals as professional developers may be largely unconnected to the work of the professional developers. • Schedule of activities • ... 		

The functions/structure analysis gives the level of information and insight that one might get from a careful examination of a photograph. A third level of analysis is necessary to

understand the dynamic interaction of components as they carry out their functions. This is the job of the process lens.

The Process Lens. The process lens helps the system analyst to examine the dynamic between the system and its environment and between the system goals and the actions of the components of the system. This lens provides the kind of information that one might gain from a careful examination of videotape. Such an analysis provides a perspective informed by changes over time. Banathy (1992) posits: “The motion picture model projects images through time, revealing movement, action, and behavior” (p.132). In a sense, this would be the equivalent of a flip book—a series of still pictures viewed in rapid succession.

One of the big questions answered via the process lens is “How?” How does the system of focus operate in its environment to accomplish its goals given the inputs, expectations, and components of the system. Or—What processes transform inputs into outputs? Possible questions that an analyst of a professional development system might use to help construct the motion picture model are presented in Table 2.4. Unlike the previous tables, no answers to the questions are attempted since they would be highly speculative.

Table 2.4 A Professional Development System Through the Process Lens

Questions concerning the Professional Development System (PDS)

Over the last five years, how has professional development in the district changed?

Are there periods of relatively high activity levels within the PDS?

- Are they predictable?
 - Does performance increase with activity levels
-

Is the professional development system growing?

- In personnel?
 - In the resources it commands?
 - In the authority it has?
-

What influences within and without the PDS are likely to affect its ability to function in the next month?

- In the next year?
 - In the next five years?
-

Is the system effective?

Is the system efficient?

The brief and general descriptions provided here, together form the starting point for my analysis of the data. The lenses will be used to generate models, which, when viewed together, will provide an understanding of the professional development system.

Summary of Systems Literature

More to come here.

Summary of Literature Review

More to come here.

Research Questions

The research questions that will guide this study are:

1. What are the components of the professional development system?
2. What are the relationships of the components to each other?

3. How does a professional development system in a K-12 school district work?
4. How does this system of professional development contribute to achieving the goals of the district?
5. What is the nature of the interaction between the professional development system and its supra-systems?
6. What are the values and core ideas reflected by the professional development system?

Chapter III. Methodology

Introduction

This investigation will be a case-study in that the purpose of the research is to develop an understanding of a phenomenon (in this case a professional development system),—a professional development system in a mid-size school district in the Midwest. In order to gain a deep understanding of the professional development system in the school district I have chosen as my instance, it will be important to use a mixed-method design as described by Creswell (2002). “A mixed method design,” according to Creswell, “is a procedure for collecting both quantitative and qualitative data in a single study, and analyzing and reporting these data based on priority and sequence of information” (p. 560). Sources of quantitative data will be questionnaires and documents. Sources of qualitative data will be questionnaires, interviews, documents, observations, and field notes.

Creswell (2002) identifies three types of mixed-method designs that vary from one another based on sequence of quantitative and qualitative data collection and on the importance ascribed to each relative to the others. My study fits most closely with what Creswell calls a triangulation mixed method design. In the triangulation design, quantitative and qualitative data are collected simultaneously, equal importance is given to each type of data, and an interpretation of the data depends on merging the two types of data into a cohesive whole. In my study, quantitative and qualitative data will be collected simultaneously (e.g. questionnaires gather both quantitative and qualitative data, interviews and observations begin before questionnaires are returned). In my study, quantitative and qualitative data will be valued for their contributions to a complete understanding of the professional development system. In terms of amount, the qualitative data will be far more voluminous than the quantitative data. In

terms of the interactions between the two types of data, triangulation is typically seen as a means of increasing the validity of a study by gathering data from multiple sources (Mathison, 1988) or in this case, multiple types of data.

The benefits of a mixed method design rest largely in that qualitative and quantitative data help to construct a more complete picture of a phenomenon than one type of data alone (Creswell, 2002). Creswell suggests that the drawbacks of mixed-method design stem from logistical issues (mixed methods are typically more difficult to conduct because of the extent of the data collection) and political issues (the mixed method tradition is fairly young and not as widely understood or accepted as some other methodologies with longer traditions). The challenges to using this design for this study lie in the time frame for the study's completion. Due to the goal of the research, more manageable data collection approaches would be less able to address the knowledge gap—a deep understanding of the professional development system of the school district.

Context and Participants

The Community

Dresden has appeared on the list of 100 best American small towns. It is known nationally and internationally for its high-end technology manufacturing jobs. The community is fairly conservative as evidenced by its many evangelical churches and is home to a small Christian liberal arts college. The community is ethnically typical Midwestern town, although the overwhelming majority of white residents is being joined by a rapidly expanding Hispanic population attracted to the area by jobs in manufacturing and agriculture.

The School District

Dresden Community Schools is one of four school districts that school-aged children in Cumberland County attend. The district is home to 6,500 students (Table 3.1). Lutheran, Amish, and Catholic schools are also available. It is estimated that 185 students who could attend the Dresden Community Schools are home schooled. Dresden was recognized in 2002 as a “best buy” educational experienced based on the quality of education for the dollars spent per student.

The school district is comprised of 10 elementary schools, two middle schools, and one high school. While both the middle schools and high school are in town, four of the elementary schools that are part of Dresden Community School Corporation are actually in small towns south, west, and north of the town.

To better understand the context of Dresden and its surrounding communities, consider three fictional teachers (*Note: will replace these with teachers from Dresden after the study begins*) who have been newly hired in Dresden Community schools. Carol is licensed to teach elementary (K-6) and will take a 3rd grade position at Beaver Meadow, one of the 10 elementary schools. Greg has a 7-12th grade license for English and has been hired to teach 7th grade at River Heights, one of the two middle schools. Elaine, licensed to teach 7-12th grade science, will take her place in the Dresden Community High School science department where she will teach Physics, AP Physics, and Earth Science.

Table 3.1 Dresden Public Schools

Schools	Type of School	Teachers	Students	Free and Reduced Lunch %	Ethnicity %				
					White	Black	Hispanic	Asian	Multi-cultural
Beaver Meadow	Elementary	9	156	39	96	0	1	1	1
Centerville	Elementary	8	134	18	96	0	3	0	1
Dewey	Elementary	24	447	37	74	2	22	0	1
Douglas	Elementary	27	415	44	75	1	20	0	4
Dresden Comm. High School	High	122	1804	18	90	1	8	1	1
Eastman	Elementary	35	601	26	89	0	7	2	2
Fairview	Middle	31	454	21	90	1	6	2	1
Hamilton	Elementary	24	419	26	85	1	10	0	3
Harding	Elementary	28	514	12	90	0	4	2	3
Jackson	Elementary	8	150	26	95	1	4	0	0
Kennedy	Elementary	23	460	36	83	1	13	2	2
River Heights	Middle	38	542	31	88	0	8	1	2
Thompson	Elementary	20	298	44	73	3	20	1	1

Fresh from college, these teachers are considerably younger than average Dresden teacher, who is 43 years old, and their starting salary of just under \$30,000 is considerably less than Dresden's average teacher who makes \$44,800 per year. The student teaching experiences of Carol, Greg, and Elaine are matched with a staff that has extensive teaching experience and, for the most part, Master's degrees. Of those teachers holding MA's, many are old enough to have life licensure—a provision freeing teachers from any need to further their education beyond their masters certification but which was replaced, in 1990 (White, 1990), with a continuing education policy.

As one might expect, the elementary school demographics vary widely. Carol's 3rd grade position at Beaver Meadow—enrollment just under 160 places her in the third smallest elementary school. On the average, Dresden elementary schools enroll about 200 more students

than Beaver Meadow. Based on the 40 percent of children who receive free and reduced lunch, only two of Dresden's elementary schools are poorer than Beaver Meadow. By no stretch of the imagination can Carol's school be classified as ethnically diverse. Ninety-six percent of Beaver Meadow students are white complemented by just a few students claiming Hispanic or multiracial heritages. Dresden's ethnic picture ranges from the Beaver Meadow extreme to the moderately diverse Thompson Elementary serving a student body that is 73 percent white. In all Dresden schools, the largest minority group is of Hispanic descent.

Greg will begin his teaching career at River Heights Middle School. The larger and poorer of the two Dresden middle schools, River Heights serves students from six of the ten elementary schools. River Heights and Fairview, the other middle school, have a similar ethnic make up with 90 percent of the student body being white.

Some of Greg's students may eventually meet Elaine in the high school. Both middle schools feed into Dresden's only high school. Of the high school's nearly 2000 students, 200 claim non-white ethnicity and 400 students receive aid in the form of free and reduced lunches. In her orientation, Elaine learns that Dresden Community High School students score right on the state average on the combined SAT and that the high school graduation rate is 90 percent--good but not beyond improvement.

Carol, Greg, Elaine and their colleagues serve about 6,500 students, which represents a slightly climbing enrollment. Of these 6,500 approximately 14 percent are identified as special education students and about 8 percent are limited English learners—a small percentage but one that has increased sharply in the five years preceding this study as the Hispanic population has blossomed. As these teachers leave the orientation meeting prior to their first day, Dresden's mission statement adorns the packet of materials they have been given: *Dresden Community*

Schools is dedicated to providing all students with a quality education to enable them to be life-long learners and successful citizens

Additionally, the local teacher's union has disaffiliated from the state teacher association, an arm of the National Education Association. Reasons for this break include the rising cost of membership in the state teachers union and discomfort among local teachers with the political leanings of the National Educational Association.

Participants

The participants for this study include all school personnel who participate in or are affected by the professional development efforts of the district. This includes the principals of each school and any assistant principals, the approximately 350 certified teachers of the district, and various administrative personnel such as the superintendent and assistant superintendent along with school board members, professional developers, and the representatives from the teacher's union. The participants in the study can be divided into three groups (Table 3.1).

Table 3.2 Study Participants

Participant Groups	Individuals
Principals (approximately 20)	Principals from thirteen schools
Classroom Teachers (approximately 350)	Representative sample of teachers
Miscellaneous-Leadership (approximately 20)	Superintendent Assistant superintendent Technology coordinator Professional development personnel Financial officer Board members Teacher union representatives School board members

Principals in the school district will be asked to help me in two ways. First, principals will share their perspectives on and their roles in professional development by completing a survey (Appendix A) or by participating in an interview or both. Principals will also help by providing access to the teachers of the district.

Teachers will have three opportunities for participation. Teachers can complete a survey (Appendix B), volunteer to be interviewed, submit a copy of their most recent professional growth plan, or do all three. Since it will be impossible for me to interview all of the 300+ teachers in the school district, I will select a purposive sample from among the teachers who have volunteered to be interviewed.

My goals in choosing which teachers to interview will be to select a sample that 1) achieves saturation in the themes that are developing in the study (Creswell, 2002) and 2) guards against systematic sampling bias. In choosing teachers for a study on teacher perceptions of professional development experiences, Sandholtz (2002) interviewed participants who varied regarding teacher experience, subject area, educational level, age, and gender. I think that years of teaching experience can serve as a proxy for age and for educational level and so have settled on four variables that I will use to purposefully select teachers: gender, years of teaching experience, school size, and subject/grade level.

It is improbable that huge differences in professional development can be explained simply by gender differences, and yet gender may be an influencing factor. Since there are more women than men on the Dresden staff, professional development research that does not account for the uneven distribution may yield outcomes that do not proportionately represent the views of the teaching staff. It is also possible that principal-teacher relationships, which tend to be male-female relationships, could influence professional development. Men may be more or less

disposed toward certain types of professional development than women. For example, men and women may differ in their approaches to professional development regarding technology. It is also possible to imagine traditional gender-based family roles playing into the amount and type of professional development that teachers take on. Again, it is unlikely that gender is a huge issue when it comes to understanding professional development, but it is at least worth considering.

Years of teaching experience are more likely than gender to influence the amounts and kinds of professional development that teachers undertake. In Indiana, teachers near the beginning of their careers take part in professional development activities mandated by the state. Older, more experienced teachers may have life licenses and therefore have few if any external incentives to improve their practice in significant ways beyond what the school district mandates.

The size of schools could affect the professional development of teachers since the circle of colleagues is smaller and there is less combined experience on which to draw. Where teachers in larger schools may benefit from professional development experiences that provide opportunities for growth of all teachers in one grade level or department, teachers in small schools, because they may be the only teacher at their grade level or in their subject area, may be isolated from colleagues and have fewer opportunities of professional development focused on collegial interaction.

Finally, it is certainly possible that depending on hot topics in education, teachers from a particular grade level or subject area may experience variation in the amount, type, and quality of the professional development in which they take part. Curricular trends may require changes in teacher knowledge or practice. The rotating cycle of textbook adoption represents a possible grade-level/subject area variable for professional development experiences.

The variables mentioned above will not explain all of the variation among teachers but it is reasonable to think that inattention to such details could introduce systematic bias to the data collected. The intent of this research is to understand the entire professional development system of one school district. Therefore, obvious sources of variation must be explored and will lead to a more complete data-grounded picture.

I will choose teachers from among those who volunteer to be interviewed. Without knowing names, I will choose teachers based on the demographic data that they provide. The first round of interviews will include a purposive sample of 10 teachers that approximates the female/male ratio of teachers in Dresden and that represents a variety of school sizes, years of teaching experience, and grade level/ subject area placement. After the interviews are conducted, I will make a decision about whether or not additional interviews should be conducted. This decision will rest largely on whether or not it seems that I have achieved saturation in the themes that are emerging in the study. If a saturation point has not been reached, I will conduct additional interviews, selecting additional teachers purposefully with regard to the above-mentioned variables.

The third group of participants varies in the roles they perform in the school district. The superintendent, the assistant superintendent, the school board members, the teacher union representative and the staff developers among others all can provide valuable perspectives on professional development in Dresden Community Schools. Each of these school personnel will be requested to participate in one formal interview and possibly some follow-up interviews.

Instrumentation

I will collect data from a variety of sources (Table 3.2). Primary sources of data will be surveys, interviews, document analysis, observation, and field notes. As mentioned earlier, this

effort to understand the professional development system of Dresden will be a case study using a mixed-method design. Yin (1994, cited in Merriam 1998) suggests that the case study methodology is advantageous for answering *how* and *why* questions. In the words of Bromley (cited in Merriam, 1998) “case studies tend to spread the net for evidence widely, whereas experiments and surveys usually have a narrow focus” (p. 33). The instruments I plan to use for data collection to cast my broad net are enumerated below (Table 3.2).

Table 3.3 Data Collection Methods by Participant

Data Source	Questionnaire	Interviews	Document Analysis	Observation
Principals	√	√		
Classroom Teachers	√	√	√	√
Various School Personnel		√	√	√
Public Documents			√	

Questionnaires

At the beginning of the data collection process I will use principal and teacher questionnaires to gather some basic information about their perceptions of and experience with professional development. The questionnaire data will be my first attempt to understand the phenomenon of a district professional development system. To better understand the roles of each in professional development, separate surveys for the principals and teachers have been designed. Examples of questions asked to principals (Appendix A) include demographic questions such as whether or not they have been classroom teachers and how long they have served as principal. A section of Likert-type items includes questions such as: “As a principal, I play a significant role in the professional development of teachers in my building” and “The

quality of professional development in this district is adequate.” The third and final section of the principal survey includes open-ended questions such as: “How do you assess the effectiveness of the professional development of teachers in your school?”

The teacher questionnaire also includes three sections. Demographic information will be obtained about their years of experience, primary subject and grade level taught. Likert-type items comprise most of the second section and include questions such as: “I look forward to the professional development opportunities provided for me through the school district in the form of release time” and “Teachers in my school have equal access to professional development opportunities.” The final section asks open-ended questions such as: “Think about the best professional development experience you have had since you began teaching and describe it below.”

In order to get the highest possible return rate, I plan to distribute these surveys to the principals in person and to the teachers in their respective faculty meetings. Both principal and teacher surveys ask 20-30 questions and take about 30 minutes to complete.

The questionnaire data (both the quantitative and qualitative) will be useful in two ways: 1) preliminary analysis will inform other data collection efforts, and 2) the questionnaire data will give the broadest and most representative picture of the professional development system and will help to mitigate the bias that comes from the limited number of interviews that I will be able to conduct during the study.

Preliminary analysis of the data from the questionnaires that I will distribute to the principals (Appendix A) and teachers (Appendix B) will be used to inform my interviews and will help me to create a fuzzy vision of what the current professional development system is like.

These data will be a backdrop for the more in depth data that I collect through interviews, document analysis, and observation.

Since I will have frequent and ready access to Dresden's professional developers, I will collect data from them via interviews and informal conversations rather than through questionnaires. Data from individuals in the professional development system that are "one of a kind" will be collected through interviews rather than through questionnaires which would have to be tailored for each person.

Interviews

The bulk of the data for this study will come from my interviews with various people in the school district. With the consent of the participants, I will record each of the interviews. I also plan to keep notes of each interview.

I plan to use interviews that have some of the characteristics of what Carspecken (1996) calls *semistructured* interviews. Since the goal of the study is a deep understanding of the professional development system, it will be important that my interview protocol is flexible enough so that I can probe all relevant leads. Carspecken (1996) suggests that the semistructured interview "allows for maximum flexibility" (p. 155).

Carspecken (1996) notes several characteristics of the qualitative interview. Well-designed interview protocols are structured around 2-5 topic domains anchored in concrete rather than abstract questions. The interviewer should list covert categories in each domain, subtopics that the interviewer wants to know about but does not want to bring up explicitly. According to him, the qualitative interviewer's conversation should be primarily responses to what the interviewee has said. This technique emphasizes guiding the interviewee through the interview rather than putting words into his mouth through leading questions. Finally, the protocol should

include possible follow-up questions for each topic domain (Carspecken, 1996). Interview protocols for each of the interview situations are available in Appendices C- G.

The framework that I will use to guide the interviews is the lens framework for systems analysis and design offered by Banathy (1992). Each interview will be organized around eliciting information from the participant that can inform each of the system models that can be seen through the three lenses. For example, the principal interview protocol lists an initial and a follow-up question that probes issues in each of the views of the system that I am using to analyze professional development in Dresden. Each domain on the protocol has a section listing the covert categories. These are the real issues that the questions are attempting to probe and provide additional stimuli for the conversation. Even though the domains for all of the interviews are based on the lenses, the questions that I am asking in each case are different based on what the participant can offer. The lead-off question for principals in the functions/structure domain is: “Try to imagine a school where no professional development existed. What would be lost in the case of the individual teacher, the school, the district?” This question probes what the principal sees as the role or purpose of professional development across various levels of the educational system. Covert categories that I would like to address during the time that I am visiting with the principal regarding the functions/structure aspect of the professional development include:

- Principal’s ideas of the purpose of professional development at several levels
- Role in professional development
- His/her interactions with other components of the system
- His/her view of the structure and responsibilities
- Role of evaluation in professional development

- Guiding staff as whole
- Guiding teachers as individuals

I conclude this section of the principal interview with the possible follow-up question: “Describe the typical teacher professional growth plan. How do you influence the direction and scope of the plan?” This targets the relationship between the principal’s notions of professional development and the teacher’s role in the professional development system. Other examples of opening questions, covert categories and follow-ups are available for each type of person that I will interview (See Appendices A-G).

Document Analysis

Document analysis will also provide an important source of data (both quantitative and qualitative) for my understanding of the professional development system. A preliminary list of documents that I would like to analyze, including teacher contracts, the school district web site, and teacher professional growth plans, appears in Table 3.3. I will also be looking for additional artifacts during the time that I spend in Dresden. I anticipate that announcements of professional development activities and school board minutes will also be relevant to my study.

Analysis of the documents is likely to yield various types of information. I imagine two basic document groupings 1) the teacher contract, handbook, and professional growth plans and 2) miscellaneous documents such as the school web site and other school and school district publications.

For the first group of documents, I will be looking for patterns in types of professional development in which teachers engage across the school district and within schools. I will be interested in observing evidence of professional development trends within school buildings across the district based on the teacher professional growth plans.

The second group of documents should help to determine the consistency and coherence of professional development efforts. It may also be possible to make some determinations about the strengths and weaknesses of communication channels within the professional development system based on these documents.

I will not maintain an arbitrary division between the two groups of documents that I have described. For example, I image both groupings providing a sense of the forces internal to the professional development system and of influences external to the professional development system.

Table 3.4 Sources of Documents for Document Analysis

Documents	Source
Sample Teacher Contract	Administration
Budgetary Information	Administration
School Web Site/Publications	Publicly Accessible
Individual Professional Development Plans	Teachers

Observations

I plan to take part in as many professional development related activities as possible as part of my data collection approach. This could involve events such as staff meetings, principal meetings, professional development events, shadowing professional development personnel, and observing teachers in their classrooms. The primary sources of data from such interactions would be my field notes.

As I observe these professional development events, I will use the framework of effective professional development components provided by Garet et al. (2001) as a starting point. I will take note of the structural features of the event or activity including form, duration, and degree of

collective participation. I will also record observations regarding the degree to which the professional development is content focused, promotes active learning, and is coherent with other professional development that teachers have experienced in the school district. These variables will form framework for my observations to which I will add others including the interactions among participants (participant/participant) and the interactions among participants and professional developer (participant(s)/professional developer). It will be impossible for me to categorize all interactions in such settings as high or low quality or of one type or another—nor am I interested in doing so. I will use the Garet, et al. framework to help me develop my view from the motion picture lens that I described in the review of the systems literature. Other than the amount of time that I spend in the school district, my observations of actual professional development in action represent my best chance for forming a sketch of how the components of the professional development system function over time.

Data Collection

I will begin my study by contacting the superintendent—seeking his permission to conduct the study in the school corporation. I will ask the superintendent to make the principals aware of the study. I will then contact the principals to request their participation through survey and interview as well as through providing time for me to make a short presentation to their faculty. The principals will be presented with a study information sheet (Appendix H) and if they consent will be asked complete a questionnaire and will be asked to schedule an appointment for an interview (See principal interview protocol in Appendix C). During this initial contact, I will also request a time to present my study to their faculty.

The teaching faculty of the Dresden Community Schools will have three ways to directly participate in the study. Teachers will be given a study information sheet (See Appendix I) that

explains their options for participation. Teachers can complete the professional development survey, volunteer to participate in an interview, and/or submit their most recent professional growth plan.

Teachers and principals who participate in the study will be able to return any materials such as their surveys (principals and teachers), volunteer-for-interview sheets (teachers), and professional growth plans (teachers), to me by placing the materials in an envelope marked for that purpose in the school office or other designated area. I plan to have made contact with the principals and with the teachers by the end of February, 2003 and plan to collect all of the surveys and other materials by the middle of March, 2003. Interviews with the principals and teachers will be scheduled for times following the mid-March collection date.

During the interim period after the initial contact of the principals and the teachers, I will begin the interviews of various other school personnel who have relationships with the professional development system. I have proposed a list of who these miscellaneous individuals are in Table 3.1. As mentioned in the instrumentation section, the interviews will be semistructured and will be organized around understanding the professional development system through Banathy's lenses. For example, I will ask the assistant superintendent of curriculum and instruction questions regarding the local environment, the function and structure of the professional development system, and the trends and patterns that she sees in the professional development efforts of the district. For the assistant superintendent, three questions that mirror Banathy's lens approach are 1) What are the contractual obligations of teachers to take part in professional development? 2) What is your role in the professional development efforts of the district? 3) How has the district approach to professional development changed in the past year?

The above questions are only examples but serve to illustrate how I will tailor the lens approach to focus my questions and to tailor them to the individual that I am interviewing. Participants in this group of miscellaneous individuals will take part in one formal interview and possibly additional follow-up interviews as outlined in the study information sheet (Appendix J). I anticipate beginning with those individuals who have roles most influential to the operation of the professional development system. This is because I am likely to need to conduct follow-up interviews with these individuals and because they are likely to be the most informative. I am planning to continue these interviews throughout the data collection period, which runs from mid February, 2003, to early May, 2003.

In addition to the surveys for principals and teachers, the interviews for principals, some teachers and miscellaneous school personnel, and the professional development plans from teachers, I will also be collecting data in my field journal that I will have with me during my observations of the various professional development activities that take place during the time of my data collection. These events could be workshops, faculty meetings in which professional development is discussed, days where I am shadowing the professional development personnel of the district or any other type of professional development activity. I plan to attend as many professional development activities as I can between mid February and early May, 2003. I plan to spend 4-6 days shadowing the professional developers in the school corporation. During the interviews and the observations I will be collecting documents related to professional development. The document collection will be largely incidental with the exception of the formal request for teacher professional growth plans that I mentioned earlier.

Data Analysis

I plan to follow the general plan for qualitative data analysis described by Creswell (2002). His analysis cycle begins with developing a general sense of the data and then proceeds to generating codes and clustering them into themes. Creswell suggests that for qualitative research, “data collection and analysis (and perhaps the report writing) are simultaneous activities” (p. 257-258). It will be important that my data analysis begin immediately in the data collection process, not only to keep the project manageable, but also in order that I can make the most of subsequent data collection efforts—particularly the interviews.

I plan to use Banathy’s lenses described at the end of the last chapter as a framework for analyzing the professional development system. I will use the data to elaborate the descriptions of the systems-environment model, the functions/structure model, and the process model. Data analysis for qualitative research usually involves coding the data and developing themes from the codes. In this study, I will use the code-theme approach and will use the themes to elaborate my conception of the professional development system.

The data analysis will be continuous starting as the first surveys are returned and the first interview is conducted and will proceed throughout the collection of the data from all sources and continue beyond the data collection phase. Preliminary analyses of data from each method of collection will inform subsequent data collection within and across each method of data collection. For example, analysis of the surveys could suggest potential questions for interviews.

Researcher Bias and Assumptions

I did my student teaching in a sixth grade classroom at Harding, one of Dresden’s in-town elementary schools, and was then hired to teach 6th grade there the following academic year. During the six years that I worked in Dresden Community Schools, I taught three years in one position and three years in another—all at Harding. I was also involved in a number of other

school-related commitments ranging from committee work to coaching. During the summers I assisted in providing technology and science-oriented professional development opportunities for the Dresden staff.

After resigning from my job as a teacher, I returned to Dresden in the summers to conduct summer workshops and maintained close contact with many colleagues in the school district. At about the same time that I left Harding, I began to serve on a planning and design committee, the primary function of which was to plan a learning fair. This required many meetings where we designed and re-designed the event—an effort that continues to the present. The group of educators on this committee represents one of my closest ties to the Dresden Community Schools.

As is evident from my experience, I can hardly be a detached observer during this research. My experience with the corporation, my close ties with teachers and school personnel, and my interest in the success of the schools could all be confounding biases during this research. As Peshkin (1988) notes, it is not sufficient to merely acknowledge one's subjectivity. It is important that that subjectivity be confronted and addressed systematically. I plan to keep a reflective journal that I anticipate will be helpful in a number of ways, including a chronicling of my thoughts and feelings about the process and the findings.

I think that my former and continuing association with the school district will also be beneficial to the study. Six years of successful teaching and extensive interaction with many teachers through the professional development activities that I helped to organize and deliver, both while I was employed as a teacher and since, provide a strong knowledge base about the school district and a good rapport with many. This familiarity with the school district will provide insights into the data as well as help me know where to look for information as I seek to

understand the professional development system. My experience in the district provides a basis for interaction with the school system that could never be achieved by a researcher who is a new face.

Although many of the potential benefits of familiarity have accompanying potential detriments, I plan to leverage the benefits and minimize the detriments. I think that my best efforts to minimize the detriments will require a questioning stance toward the study—a stance that is constantly looking for disconfirming evidence—a stance that does not favor the familiar for the unfamiliar or the expected for the unexpected.

Beyond the biases inherent in my familiarity with Dresden are biases stemming from my view of professional development. I believe strongly that comprehensive approaches to professional development at the district level are essential for improving instructional quality and ultimately for improving achievement for all students. My overarching professional passion is the improvement of pedagogy. I will need to be careful not to let this strong interest in good teaching prevent me from seeing beyond the circle of pedagogical issues to the broader contexts in which teaching occurs.

Addressing Trustworthiness

Fundamental to establishing trustworthiness of a qualitative study, according to Lincoln and Guba (1985), is answering the question: “How can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, worth taking account of?” (p. 290). Even though both quantitative and qualitative data will form the bases for conclusions from this study, it seems important to address the validity/reliability issue from a qualitative or naturalistic perspective since, in large measure, my data will be obtained through interviews and the interpretations I make of them. Validity and reliability may be appropriate for

discussing research involving strictly hard-edged instruments such as tests and surveys, but when the instrument for collecting data is human, trustworthiness and how to increase it seem better suited.

I have chosen the qualitative path, not because I reject objective truth or because the epistemological claims that underlie the naturalistic paradigm mirror my beliefs about the world. Simply, the phenomenon under consideration in this study—a professional development system—is made up of people and their relationships with one another. The system is ill-defined and requires an instrument that is flexible and adaptive to gather the necessary information, which can then be used to construct a credible description.

Lincoln and Guba (1985) suggest that efforts to increase the trustworthiness of research carried out through naturalistic inquiry address four main concerns: credibility, transferability, dependability, and confirmability. I will explain what is meant by each of these terms, relying mostly on the thinking of Lincoln and Guba, and then I will explain how I plan to account for these issues in this study.

Credibility. Making sure that the conclusions that result from a study are believable is the primary means of increasing trustworthiness. Lincoln and Guba (1985) suggest five ways that naturalistic researchers can increase credibility: 1) through three activities aimed at increasing the likelihood that believable interpretations are produced: prolonged engagement, persistent observation, and triangulation, 2) through peer debriefing—an external check on the process, 3) through negative case analysis—an activity intended to help refine hypotheses as they emerge, 4) through referential adequacy—designed to archive raw data as a reference point and 5) through member checks—seeking the study participants' reactions to the findings and interpretations of

the researcher. Each of these is suggested because they address potential threats to the credibility and ultimately the trustworthiness of research findings.

My plan for addressing the credibility of my research addresses a number of issues raised by Lincoln and Guba. First, my data collection will be time intensive and will require a significant amount of time in the school district. My time is flexible and if it is necessary to stay longer than I am initially planning, I can do that. One advantage that I have in this aspect of the research is that I already know the context through my “prolonged engagement” of six years in the school corporation.

Second, the observations that I have planned during the course of my stay in Dresden will help me to focus on key elements of interest. As Lincoln and Guba say: “If prolonged engagement provides scope, persistent observation provides depth” (p. 304). Using Banathy’s lenses as frameworks for constructing models of the professional development system will help to focus my observations.

Third, the multiple data sources that I plan to use will address Lincoln and Guba’s triangulation issue. Mathison (1988) makes an important observation that even though triangulation is typically seen as a source of confirming evidence and thereby a boon to validity, multiple data sources are just as likely to yield inconsistent and contradictory evidence. Mathison goes on to suggest that all three outcomes of triangulation—a) confirmation, b) inconsistency, and c) contradiction among data sources—offer the researcher important opportunities for interpretation and sense making. As I begin to get a general sense of the data and then proceed to coding and interpretation, it will be imperative that I look not only for evidence that confirms, but also for the surprises of inconsistency and contradiction. It is possible that in such evidentiary conflict lie the most important findings of the study.

To further increase the credibility of my study I plan to periodically use peer debriefing with fellow graduate students. Finally, I will use member checking for each of my interviews by sending e-mail copies of my notes about the interviews to the participants for their comment. I am not guaranteeing that participant responses to the member-checking activity will be reflected in the research, but I also do not view this as a perfunctory measure.

Transferability. This aspect of the findings of naturalistic inquiry is the qualitative counterpart to generalizability. Rather than controlling confounding variables, the qualitative inquirer embraces them and provides the consumer with a thick description of what happened or how the results came to be. Lincoln and Guba (1985) suggest that the burden of transfer is really on the consumer of the research and that the researcher's job is simply to provide a thick enough weave of data so that the consumer has enough information on which to base his or her decision about the practicality and feasibility of transferring the results from the situation and context in which the research was conducted to a new set of circumstances and a new context.

In my study, I will provide such evidence by maintaining thorough records and files of data, including transcriptions of the interviews. The findings will be recounted in such a way as makes ample yet judicious use of participant quotes. Furthermore detailed and relevant descriptions of contextual factors will also be included in the final research account.

Dependability. The dependability of research findings is the naturalistic answer to the construct of reliability. Research findings that could be obtained by repeated use of a methodology or even by using several methodologies (Lincoln & Guba, 1985) could be said to be dependable. Lincoln and Guba recommend that an audit be conducted to address the dependability of naturalistic research and the confirmability. I will present my plan for

addressing dependability after discussing confirmability since my plan includes one activity that addresses both issues.

Confirmability. Confirming research findings in naturalistic inquiry is akin to the objectivity valued in quantitative research paradigms. Again, Lincoln and Guba (1985) offer the research audit as a means for confirming the research findings by an outside party, thus increasing the overall trustworthiness of the study.

To address both dependability and confirmability, I plan to keep a reflexive or reflective journal as described by Lincoln and Guba (1985). They suggest that such an effort by the researcher is like providing the same kind of data about the human instrument as is often provided for pencil and paper means of measurement. The reflexive journal, Lincoln and Guba point out, is likely to have separate sections devoted to 1) an accounting of the daily schedule and logistical concerns, 2) a personal diary, and 3) a methodological log. The reflexive journal will also be important for addressing my personal biases, especially those that crop up from my extended experience in the district and preconceptions of colleagues and of professional development.

Chapter IV: Findings

Chapter V. Discussion, Limitations, Recommendations for Future Research

Limitations of Systems Thinking

One of the paradoxes of systems thinking is that in order to understand a system, it is important to understand the supra-system in which it is nested. Since each supra-system is a sub-system of yet another supra-system it is soon apparent that an infinite string of nested systems prevents real understanding. Rather than chasing tails, systems thinkers must accept that understanding is always incomplete and time bound. At the same time this does not negate the usefulness of systems thinking as a tool. By accepting the interconnectedness of the world and the complexity that such an understanding entails, systems thinkers are better able to analyze the complexity of the problems they face. Speaking of this paradoxically beneficial and confounding concept of expansionism, Hutchins (1996) says, “Since in some way everything is connected to everything else, to really understand a complex system is, practically speaking, a very difficult task. It also helps to underscore,” he points out, “that objectivity is not part of the new paradigm” (p. 30).

Another difficulty in understanding that comes through systems analysis is that since relationships are the currency of systems thinking and relationships are constantly in flux over time, any understanding based on systems thinking is susceptible to being constantly outdated. This problem is simply part of understanding complexity. It cannot be avoided. This has important implications for the extent to which general application can be made from research findings. If describing a system is fundamentally about understanding relationships, interactions, and multiple causality, all of which are inherently sensitive to time, then the description of the system is sensitive to time as well.

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Appendices

- k. Increasing the amount of resources directed to professional development of teachers would be the best way to increase student achievement in this district.....
- k. Most of the professional development experiences for teachers in this district do not emphasize learning from colleagues
- l. Professional development provided for teachers should be evaluated primarily according to the effect that it has on student achievement.....
- m. The overall quality of professional development in this district adequate
- n. In terms of all the efforts that this district takes to improve the quality of education offered to students, professional development of teachers is the top priority

Section D: Open-ended Questions

- D.1 Think of a professional development session that you were responsible for planning. Describe it in several sentences. What influenced your decision about how to structure the activity and what content to address?**
- D.2 In what ways are the professional development experiences in your building similar or different compared to the professional development that teachers may experience in another building?**
- D.3 Please feel free to comment about anything that you would like to say about professional development and did not have a chance to discuss as you answered the other questions on the survey.**

Section E: Demographic Information

- E.1 Name of school: _____
- E.2 Title at this school: _____
- E.3 Gender: Male Female
- E.4 Completed years of classroom experience: _____
- E.5 Completed years of experience as a principal: _____
- E.6 Completed years as principal in this district: _____
- E.7 Completed years as principal in this school: _____
- E.8 Describe your ethnicity. (check one)
- African-American
 - Asian-American
 - Latino/Hispanic American
 - Caucasian
 - Other: (Please Specify) _____

Thanks for your time.
Please place the completed survey in the envelope provided in the school office

Appendix B: Teacher Questionnaire

Professional Development Questionnaire

Thanks for taking the time to complete this questionnaire. In this questionnaire the term *professional development* refers to any experience that you have had that helps you grow professionally. This could include college or university courses, release time, workshops, study groups, conferences or other activities or endeavors in which you have participated to improve yourself professionally. Professional development can occur in both formal and informal settings. If you have comments regarding this survey, please contact John Keller, jbkeller@indiana.edu.

Section A: Frequency, Content, and Location of Professional Development

A. 1 Consider the approximate time you spent in professional development since May 2002. Record two answers for each question to indicate where the professional development occurred.

	Location	
	In your district	Outside your district
a. Excluding early release and late arrival sessions, how many contract days have you been out of your classroom for purposes of professional development (count half-day as 0.5).....	_____ days	_____ days
b. Number of professional development sessions before or after school or evenings	_____ sessions	_____ sessions
Avg. hours per session	_____ hours	_____ hours
c. Number of non-contract days spent on professional development including Saturdays and summer (count half-day as 0.5)	_____ days	_____ days

A. 2 In the professional development activities you have attended since May 2002, which of the following topics were discussed?

	Topic not discussed	Topic Mentioned	Central Topic
a. Content to teach your students (e.g. state standards)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. New knowledge about your subject-matter (for your own education)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. How to use school software (Microsoft Office, grading program etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Integrating computers into instructional activities in your subject area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. New instructional methods (e.g. project-based learning, collaborative learning, 4-block)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Classroom management.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Accountability legislation (e.g. No Child Left Behind, Public Law 221).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Other: (Please Specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A. 3 What do you see as your most important professional development need? _____

A.4 Where is the need you mentioned above most likely to be met? (check one)

- Through professional development opportunities offered in this district
- Through informal interactions with other teachers in this district
- Through college or university courses
- Through workshops or conferences outside the district
- Other: (Please Specify) _____

Section B: Changes in Practice

B.1 Considering the changes in your teaching practice over the last three years, how would you describe the degree of change?

	Little/No Change	Moderate Change	Significant Change
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B.2 Describe the changes you have made in your teaching practice over the last three years.

B.3 Considering all of the ways that you have changed your teaching practice over the past three years, how big of a role did each of the following reasons play?

	Not a reason	Minor Reason	Moderate Reason	Major Reason
a. Changes in the subjects, grade levels, or courses you teach.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Changes in district policies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Changes in the climate or emphasis at your school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Professional development experiences that you have had.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Changes based on accumulating more classroom experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Discussions you have had with other educators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Changes in the expectations you have for your students.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Changes in your understanding of how people learn or understand things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Changes in the textbooks you are given to use.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Changes in the abilities or prior achievement of the students.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C.2 Indicate the extent of your agreement or disagreement with the statements below.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
a. The purpose of professional development for K-12 teachers is to increase student achievement by improving instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. In this district, teachers play an important role in defining professional development activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Professional development activities in this district are followed by support to help teachers implement new practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Administrators play an important role in defining professional development activities in this district.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. The focus of professional development in this district has been influenced by legislation such as the No Child Left Behind Act and/or Public Law 221	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. This school district should include more professional development time in teaching contracts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Teachers in this school corporation have equal access to professional development opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. The quality of professional development that I have experienced in this school district is satisfactory.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Professional development in this school district fosters teacher creativity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. In this district, the professional development activities emphasize the importance of reflecting on classroom experience as part improving one's practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Most of the professional development experiences in this school district <u>do not</u> emphasize learning from colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Professional development should be evaluated primarily according to the effect that it has on student achievement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section D: Open-ended Questions

D.1 Who are the individuals primarily responsible for your professional development in this district?

D.2 What is the biggest challenge to your professional growth (e.g. finding time, support, finances)?

D.3 What criteria do you use to determine whether or not a professional development experience is worthwhile?

D.4 Other than the need to maintain certification and to fulfill the obligations of your teaching contract, what motivates you to take advantage of professional development opportunities?

D.5 Please feel free to comment about anything that you would like to say about professional development and did not have a chance to discuss as you answered the other questions on the survey.

Section E: Demographic Information

E.1 Gender: Male Female

E.2 Teaching experience (Years completed): _____

E.3 Teaching experience in this school corporation (Years completed): _____

E.4 School building(s) in which you teach: _____

E.5 My current salary level is. . . (check one)

Bachelors

Bachelors + 15 hours

Masters

Doctorate

E.6 What is the primary subject you teach? _____

E.7 What grade level(s) do you teach? _____

E.8 Describe your ethnicity. (check one)

African-American

Asian-American

Latino/Hispanic American

Caucasian

Other: (Please Specify) _____

Thank you for your time.
Please place the completed survey in the envelope provided in the school office.

*Appendix C: Principal Interview Protocol***Topic Domain One: The systems/environment lens of professional development****Lead-off Question:**

Think about the last time that you were in charge of planning a professional development session for your staff—like one on an early release or late arrival day. What influenced you to choose the activities and content that you did?

Covert Categories:

principal's sense of autonomy in making professional development decisions for staff, what is the impact of professional development (outputs)?; the amount and availability of resources for carrying out professional development

Possible Follow-up Questions:

How do you see professional development changing in your school and in the school district based on the new accountability measures such as the No Child Left Behind Act and P.L. 221?

Topic Domain Two: The functions/structure lens of professional development**Lead-off Question:**

Try to imagine a school where no professional development existed. What would be lost in the case of the individual teacher, the school, the district?

Covert Categories:

Principal's ideas of the purpose of professional development at several levels; personal role in professional development; his/her interactions with other components of the system; his/her view of the structure and responsibilities; role of evaluation in professional development; guiding staff as whole; guiding teachers as individuals.

Possible Follow-up Questions:

Describe the typical teacher professional growth plan. How to you influence the direction and scope of the plan?

Topic Domain Three: The process lens of professional development

Lead-off Question:

Knowing what you do about this school corporation and its approach to the professional development of teachers, would you say the last five years have been a time of improvement, maintaining the status quo, or deterioration? Explain.

Covert Categories:

Is it changing? Positively? Negatively? What is the future like? What is the ebb and flow of professional development?

Possible Follow-up Questions:

What is the brightest future you can imagine for the professional development of teachers in this district?

Appendix D: Teacher Interview Protocol

Topic Domain One: The system/environment lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Two: The functions/structure lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Three: The process lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Appendix E: Superintendent Interview Protocol

Topic Domain One: The system/environment lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Two: The functions/structure lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Three: The process lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Appendix F: School Board Member Interview Protocol

Topic Domain One: The system/environment lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Two: The functions/structure lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Three: The process lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Appendix G: Teacher Union Representative Interview Protocol

Topic Domain One: The system/environment lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Two: The functions/structure lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

Topic Domain Three: The process lens of professional development

Lead-off Question:

Covert Categories:

Possible Follow-up Questions:

*Appendix H: Study Information Sheet--Principals***Study # 03-7877****INDIANA UNIVERSITY-BLOOMINGTON
STUDY INFORMATION SHEET--Principals**

Project Title: A Systems Perspective of Professional Development

You are invited to participate in a research study. The purpose of this study is to explore the professional development efforts in Warsaw Community Schools. We are interested in understanding the relationships among all aspects of the professional development system.

INFORMATION

During the month of February 2003, you (and the other principals in the school district) will receive two items from the principal investigator.

1. A survey about professional development. These surveys will take approximately 30 minutes to complete. The survey can be returned to the principal investigator by returning it to the envelope provided in the school office.
2. A form requesting your participation in one 30-45 minute interview to discuss professional development. If you are willing to be interviewed you will be contacted between February and June 2003 to arrange a time for the interview. The interviews will be taped and the tapes will be destroyed by July 1, 2004. During the interview, field notes will be taken by the principle investigator. A summary of the field notes taken during the interview will be sent via e-mail to the principal for their comments. This form can be returned to the principal investigator by returning it to the envelope provided in the school office.

The principle investigator will also be observing in the school district at workshops, in faculty meetings, as a result of job shadowing professional development personnel, or other school events. The principle investigator will be taking notes in a field journal but will not be identifying you by name.

BENEFITS

By participating through either the survey, the interview, or both, you will be making a valuable contribution to Warsaw Community Schools and to the knowledge of professional development in K-12 settings. This study is unique in its attempt to understand professional development as a system of interactions at the school district level. Your participation is appreciated.

CONFIDENTIALITY

Any information obtained about you as a result of your participation in this research will be kept confidential. For research purposes, electronic transcripts of the interviews and audio tapes of interviews will be coded to help protect anonymity. All information collected as a result of this research will be in the sole possession of the principle investigator. In addition, if the results of the research project are presented at a professional meeting or journal publication, no

information by which you can be identified will be included. While the principle investigator will keep the transcripts of the interviews and the field notes indefinitely, the surveys, audiotapes, and code lists will be destroyed by July 1, 2004.

CONTACT

If you have questions at any time about the study or the procedures, you may contact John B. Keller, at Indiana University, School of Education, Room 2123, Bloomington, IN 47401 and (812) 856-8205 X32230 and jbkeller@indiana.edu.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have not been honored during the course of this project, you may contact the office for the Human Subjects Committee, Bryan Hall 110, Indiana University, Bloomington, IN 47405, 812/855-3067, by e-mail at iub_hsc@indiana.edu.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. There is no connection between the responses that you provide as part of this research and your evaluation as a school employee. If you withdraw from the study before data collection is completed your data will be destroyed.

Information Sheet Date: March 7, 2003

*Appendix I: Study Information Sheet--Teachers***Study # 03-7877****INDIANA UNIVERSITY-BLOOMINGTON
STUDY INFORMATION SHEET--Teachers**

Project Title: A Systems Perspective of Professional Development

You are invited to participate in a research study. The purpose of this study is to explore the professional development efforts in Warsaw Community Schools. We are interested in understanding the relationships among all aspects of the professional development system.

INFORMATION

As a teacher, you (along with all other teachers in the school district) you can participate in this study through:

3. A survey about professional development. The survey will take approximately 30 minutes to complete. The survey can be returned to the principal investigator by returning it to the envelope provided in the school office.
4. A form requesting your participation in one 30-45 minute interview to discuss professional development. Being willing to participate in an interview does not guarantee that the teacher will be contacted for an interview. Based on demographic data, a cross-section of the teaching staff (10-20 teachers) will be interviewed during the period February-June 2003. The interviews will be audio taped and the tapes will be destroyed by July 1, 2004. The principle investigator will also be taking field notes during the interview. A summary of the field notes taken during the interview will be sent via e-mail to the teacher for their comments. This form can be returned to the principal investigator by returning it to the envelope provided in the school office.
5. A form requesting the submission of a photocopy of your most recent professional growth plan. The professional growth plan can be returned to the principal investigator by returning it to the envelope provided in the school office.
6. Allowing for observations—these could take place in your classroom, at workshops you attend, in faculty meetings, as a result of job shadowing with professional development personnel, or other school events. The principle investigator will be taking notes in a field journal but will not be identifying you by name.

BENEFITS

By completing the survey, by volunteering for an interview, by submitting a professional growth plan or by doing all three, you will be making a valuable contribution to Warsaw Community Schools and to the knowledge of professional development in K-12 settings. This study is unique in its attempt to understand professional development as a system of interactions at the school district level. Your participation is appreciated.

CONFIDENTIALITY

Any information obtained about you as a result of your participating in this research will be kept confidential. For research purposes, electronic transcripts of the interviews and audiotapes of interviews will be coded to help protect anonymity. All information collected as a result of this research will be in the sole possession of the principle investigator. In addition, if the results of the research project are presented at a professional meeting or journal publication, no information by which you can be identified will be included. While the principle investigator will keep the transcripts of the interviews, the professional growth plans, and the field notes indefinitely, the audiotapes and code lists will be destroyed by July 1, 2004.

CONTACT

If you have questions at any time about the study or the procedures, you may contact John B. Keller, at Indiana University, School of Education, Room 2123, Bloomington, IN 47401 and (812) 856-8205 X32230 and jbkeller@indiana.edu.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have not been honored during the course of this project, you may contact the office for the Human Subjects Committee, Bryan Hall 110, Indiana University, Bloomington, IN 47405, 812/855-3067, by e-mail at iub_hsc@indiana.edu.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. There is no connection between the responses that you provide as part of this research and your evaluation as a school employee. If you withdraw from the study before data collection is completed your data will be destroyed.

Information Sheet Date: March 7, 2003

*Appendix J: Study Information Sheet—Other Personnel***Study # 03-7877****INDIANA UNIVERSITY-BLOOMINGTON
STUDY INFORMATION SHEET—Other Personnel**
Project Title: A Systems Perspective of Professional Development

You are invited to participate in a research study. The purpose of this study is to explore the professional development efforts in Warsaw Community Schools. We are interested in understanding the relationships among all aspects of the professional development system.

INFORMATION

During the months of February-June 2003, the principle investigator will be arranging for an interview. You, along with approximately 25 other school personnel, are being contacted because of the information and insight that you can provide about the professional development efforts conducted in Warsaw Community Schools. The interview will take between 15 and 45 minutes depending on how closely connected to professional development efforts you are. With your consent, the principle investigator may request one or two follow-up interviews for additional clarification and discussion (10-20 minutes). Only the first interview will be audio taped and the tape will be destroyed by July 1, 2004.

The principle investigator will also be observing in the school district at workshops, in faculty meetings, as a result of job shadowing professional development personnel, or other school events. The principle investigator will be taking notes in a field journal but will not be identifying you by name.

BENEFITS

Each individual who participates will be making a valuable contribution to Warsaw Community Schools and to the knowledge of professional development in K-12 settings. This study is unique in its attempt to understand professional development as a system of interactions at the school district level. Your participation is appreciated.

CONFIDENTIALITY

Any information obtained about you as a result of your participating in this research will be kept confidential. For research purposes, electronic transcripts of interviews and audiotapes of interviews will be coded to help protect anonymity. All information collected as a result of this research will be in the sole possession of the principle investigator. In addition, if the results of the research project are presented at a professional meeting or journal publication, no information by which you can be identified will be included. While the principle investigator will keep the transcripts of the interviews indefinitely, the audiotapes and code lists will be destroyed by July 1, 2004.

CONTACT

If you have questions at any time about the study or the procedures, you may contact John B. Keller, at Indiana University, School of Education, Room 2123, Bloomington, IN 47401 and (812) 856-8205 X32230 and jbkeller@indiana.edu.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have not been honored during the course of this project, you may contact the office for the Human Subjects Committee, Bryan Hall 110, Indiana University, Bloomington, IN 47405, 812/855-3067, by e-mail at iub_hsc@indiana.edu.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. There is no connection between the responses that you provide as part of this research and your evaluation as a school employee. If you withdraw from the study before data collection is completed your data will be destroyed.