



Instructional leadership in the principal role : testing the effectiveness of practices in the implementation of a curricular innovation
by Marilyn Helen King

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University
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Abstract:

The relationship between the instructional leadership practices of elementary school principals in a district during a curricular innovation and student achievement in spelling as reflected in standardized test scores was analyzed to identify specific “best practices” in instructional leadership. Participants were classroom teachers in grades one through three and the six associated elementary principals. The design was a multi-site case study. Teachers and principals were surveyed to assess the four main areas of instructional leadership described by Smith and Andrews (1989), i.e., the principal as a visible presence, the principal as a communicator, the principal as an instructional resource, and the principal as a resource provider. These dimensions were expanded by the researcher into specific instructional leadership behaviors related to the implementation of Process Spelling.

Individual school profiles were developed, and data included in the profiles were reconstructed. School level survey results were calculated as simple averages of the collective ordinal values for each question in each of the survey subsections. An overall survey ranking was obtained for each school.

Test score information for both the Comprehensive Test of Basic Skills and the Test of Written Spelling-3 was collected and analyzed. School-specific trends and achievement and improvement patterns in comparison to other schools in the district were noted. A grounded theory was formalized by rank ordering the frequencies of leadership behaviors, opinions regarding leadership beliefs, and spelling achievement and improvement.

At the school level, high expectations should be promoted for both students and teachers. Teacher collaboration should be facilitated. The use of the teacher-leader concept appears to be an effective method to provide site leadership regarding specific content. Teacher collaboration and teacher leadership may be promoted during faculty meetings, during which opportunities for professional development should exist. The principal’s responsibility lies in the support of avenues which assist in keeping discussion of instructional methods at the forefront. Formal evaluation which includes specific instructional strategies and resultant student performance measures are important in the implementation and subsequent monitoring of curricular innovations.

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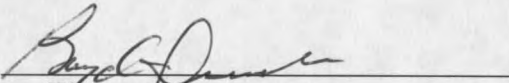
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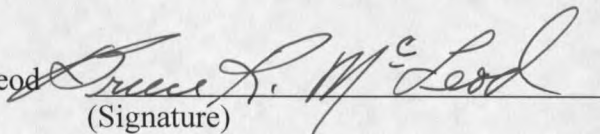
This dissertation has been read by each member of the dissertation committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

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Abstract

The relationship between the instructional leadership practices of elementary school principals in a district during a curricular innovation and student achievement in spelling as reflected in standardized test scores was analyzed to identify specific "best practices" in instructional leadership. Participants were classroom teachers in grades one through three and the six associated elementary principals. The design was a multi-site case study. Teachers and principals were surveyed to assess the four main areas of instructional leadership described by Smith and Andrews (1989), i.e., the principal as a visible presence, the principal as a communicator, the principal as an instructional resource, and the principal as a resource provider. These dimensions were expanded by the researcher into specific instructional leadership behaviors related to the implementation of Process Spelling.

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At the school level, high expectations should be promoted for both students and teachers. Teacher collaboration should be facilitated. The use of the teacher-leader concept appears to be an effective method to provide site leadership regarding specific content. Teacher collaboration and teacher leadership may be promoted during faculty meetings, during which opportunities for professional development should exist. The principal's responsibility lies in the support of avenues which assist in keeping discussion of instructional methods at the forefront. Formal evaluation which includes specific instructional strategies and resultant student performance measures are important in the implementation and subsequent monitoring of curricular innovations.

CHAPTER 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

If we, as a society, wish to improve the quality and outcomes of instruction for students, we must acknowledge the principal in providing the instructional leadership for teachers to better plan, deliver, and monitor instruction for students. Instructional leadership encompasses a broad range of actions. Professional practices that provide the foundation for instructional leadership may be viewed discretely or collectively. A need exists to know which practices in instructional leadership, when implemented during a curricular adoption, are related to increased pupil academic performance as indicated by achievement test scores. The purpose of this chapter is to introduce a study that investigated the relationship between instructional leadership practices and beliefs and spelling achievement in first, second, and third grade students in the Bozeman Public Schools.

Background of the Study

Instructional leadership results from the repetition of day-to-day acts conducted by principals that demonstrate understanding of the nature of instruction and promote growth in student learning (Blase & Blase, 1999; Hallinger & Murphy, 1987; Krug, 1992). Smith and Andrews (1989) describe a principal who is an instructional leader as one who provides necessary resources to facilitate achievement of a school's academic

goals; possesses knowledge and skill in curriculum and instructional matters in order to interact with teachers regarding improved instructional practices; communicates skillfully in one-on-one, small, and large group settings; and acts as a visionary who, by means of visible presence, articulates the school's mission. In an educational environment, the term "learning community" implies collegiality, shared problem-solving, critical thinking, and learning among its members, i.e., staff and students (Barth, 1990; Bruner, 1996; Glickman, 1993; Lambert, 1998). In a community of learners, administrators and teachers work together to design and provide instruction which will promote student academic achievement. In such a community, principals share instructional leadership with teachers in a variety of formats, including coaching, reflection, collegial investigation, study teams, and problem solving (Blase & Blase, 1999).

Principals, unlike classroom teachers, are seldom linked to students. This condition creates challenges in studying whole schools, as opposed to singular classrooms, for effects on the academic achievement of students because of the inherent variability of environments and student and teacher characteristics. In the area of principal instructional leadership, the relationship is even more problematic because the principal is not directly linked to students, as is the case of the classroom teacher. Bossert, Dwyer, Rowan, and Lee (1982) have suggested two areas of principal influence within the school setting: building school climate and supervising instructional organization. As a result of their leadership, principals may affect school governance, decision-making, communication channels, the promotion of a safe and orderly climate

for learning, staff, and parental involvement, and the allocation of personnel, financial, and other resources.

Principals' instructional leadership activities generally do not appear to affect the academic performance of students directly (Bossert et al. 1982; Boyan, 1988; Glasman & Heck, 1987; Larsen, 1985, 1987; Pitner, 1988), but do have indirect effects. Such activities are posited to have a "trickle-down effect" that promotes student achievement (Heck, Larsen, & Marcoulides, 1990).

Research, specifically case studies, ethnographies, and correlational studies, supports correlations between principal instructional leadership activities and school outcomes, including student achievement (Bridges, 1982; Hallinger & Murphy, 1987). Heck et al. (1990) suggest that the conceptual domains of principal instructional leadership are multidimensional, although causal effects of instructional leadership behavior on school student achievement have not been adequately tested.

An attempt to link principals' instructional leadership practices and beliefs to student achievement made by Andrews and Soder (1987) provided 18 strategic interactions among principals and teachers in four interrelated instructional leadership role functions: (a) resource provider, (b) instructional resource, (c) communicator, and (d) visible presence. According to Andrews and Soder (1987), strong instructional leadership in these four specific domains was associated with increased gains in mathematics and reading, particularly among low-achieving students. Although little disagreement exists concerning the belief that principals have an impact on the

effectiveness of their schools, there appears to be a “missing link” in attempts to establish a direct line of impact from principal behaviors to student achievement.

The adoption of a spelling curriculum for primary students in a medium-sized elementary school district in Bozeman, Montana provided an opportunity to explore this link. The Bozeman Public Schools’ Board of Trustees adopted the Process Spelling (Fontenault & Salter, 1993) program during the 1999-00 school year to provide strategy-based training lessons that address the needs of a differentiated classroom, and to raise student achievement levels in spelling. In curriculum implementation, the best results occur when teachers take ownership of a proposed program for change. Research suggests the instructional leadership of the principal is a critical determinant in the effectiveness of a school’s curricular program (Pajak & Glickman, 1989). This study was designed to determine the relationship between the actions a principal takes or delegates to promote growth in the achievement of students during a curricular innovation.

Problem Statement

The relationship between specific instructional leadership attributes, as practiced by a district’s principals, and student achievement is not known.

Purpose Statement

The purpose of this study was to explore the relationship between the instructional leadership practices and beliefs of elementary school principals in the Bozeman Public Schools during a curricular innovation and student achievement in

spelling as reflected in standardized test scores. It was intended to identify specific “best practices” in instructional leadership being utilized by principals who have seen increased achievement scores in spelling of students in their schools. It was also intended to identify instructional leadership practices and beliefs being utilized by principals that have not resulted in increased achievement scores in spelling of students in their schools.

Research Questions

The following question and related sub-questions were used in this study to structure the inquiry and to guide the development of research procedures and methodologies in order to achieve the research purposes:

- What specific instructional leadership practices and beliefs are related to the effectiveness of Process Spelling as inferred from spelling achievement scores?
 - What instructional leadership practices and beliefs of principals related to Process Spelling are practiced at elementary schools in Bozeman?
 - Do relationships exist between the implementation of the Process Spelling curriculum in grades 1 through 3 in the Bozeman Public Schools and increases in Comprehensive Test of Basic Skills (CTBS) spelling scores and Test of Written Spelling (TWS-3) scores?

Definition of Terms

In order to provide greater clarity and understanding, the following terms are defined. Other terms will be defined throughout the text.

Best Practices: Research-based educational practices which, when used by practitioners, have produced evidence of success. Best practices are determined by their “impact on student learning and growth and whether the school population that showed successful growth in the studies was similar to the students in the school selecting the program” (Wood & Thompson, 1993, p. 54).

Curricular Innovation: Appropriate and promising practices and procedures the staff in a school develops or adopts and, when necessary, adapts (Hall & Hord, 1987).

Gain Scores: Achievement test growth as measured by post-test minus pre-test scores. Gain scores must be used with caution, as not every participant has the same opportunity to gain, and gain scores tend to be less reliable than analysis of only post-test scores (Gay & Airasian, 2000).

In-service: A generic term used to include training activities in schools or districts. In-service activities are typically single-event opportunities. “Several times a year, school administrators release students for a half or full day and hold an ‘in-service’ program... Teachers typically spend a few hours listening and, at best, leave with some practical tips or some useful materials” (Corcoran, 1995, p. 2).

Instructional Leadership: Direction and supervision in establishing and promoting instructional improvement, i.e., helping teachers acquire teaching strategies that increase the capabilities of the students to make wise decisions in various contexts

(Glickman et al., 1995) within the organizational structure of a school. The assumption in this study is that instructional leadership activities can be measured. In this study, instructional leadership also includes provision of formal in-service training in Process Spelling.

Paradigm: A general perspective of how one views the world. "Paradigms represent a distillation of what we *think* about the world (but cannot prove)" (Lincoln & Guba, 1985, p. 15).

Process Spelling: The spelling program adopted by the Bozeman Public Schools. Marketed by its creators (Fontenault & Salter, 1993) as the Cast-A-Spell Program, Bozeman Public Schools chose to refer to the program as Process Spelling.

Professional Development: Intellectual, social, and emotional engagement with ideas, materials, or colleagues. It is a dynamic process which leads to increased personal understanding about content and pedagogy. Professional development focuses on core challenges of teaching. Professional development opportunities include individually guided development, observation/assessment, involvement in a development/improvement process, peer interactions in the form of coaching or mentoring, and reflection. Hord and Boyd (1995) write, "Professional development activities contribute to a culture of collegiality, critical inquiry, and continuous improvement; the school culture, in turn, stimulates ongoing professional development—a mutually reinforcing relationship" (p. 10).

Professional Growth: The development of technical, clinical, personal, and critical competencies in a teacher. "Teachers are professionals who, when asked to reflect

on, question, and redefine their practices, can make powerful changes to improve teaching and learning” (Black, 1995, p. 22).

Relationship: A determination of whether variables, or factors, have effects on an intended variable, in this case, student achievement in spelling. “Relationship studies attempt to gain insight into variables that are related to complex variables such as academic achievement” (Gay & Airasian, 2000).

Staff Development Program: A group activity designed to assist educators in obtaining similar concepts and achieving similar skills. Richardson, Flanigan, and Pickett (1990) describe staff development as “a process designed to foster personal and professional growth for individuals within a respectful, supportive, positive organizational climate having as its ultimate aim better learning for students, and continuous, responsible self-renewal for educators and schools” (p. 4). Although the terms in-service, professional development, professional growth, and staff development provide slightly different nuances in definition related to teacher training and continuing education, for the purposes of this study the terms are used interchangeably.

Significance of the Study

Importance to Principals

This constructivist study provides detailed profiles of instructional leadership circumstances of specific schools in order to determine *which* instructional leadership practices and beliefs are occurring at each particular school and *how* these practices and beliefs may be related to student achievement in spelling. Effective principals are

reflective principals who are able to interpret and relate the professional literature to their own particular school circumstances in the formulation of instructional leadership strategies that work best for their particular school. Sergiovanni (1995) writes:

Reflective principals are in charge of their professional practice. They do not passively accept solutions and mechanically apply them. They do not assume that the norm is a one best way to practice, and they are suspicious of easy answers to complex questions. They are painfully aware of how context and situations vary, how teachers and students differ in many ways, and how complex school goals and objectives actually are; they recognize that, despite difficulties, tailored treatments to problems must be the norm. At the same time, reflective professional practice requires that principals have a healthy respect of, be well informed about, and use the best available theory and research and accumulated practice wisdom. All these sources of information help increase understanding and inform practice. (pp. 35-36)

Contribution to the knowledge base describing effects of instructional leadership on student achievement is important. Hallinger and Heck (1996) maintain that "no universal paradigm or theory exists for organizational behavior that is valid in all contexts" (p. 7). Thus, a need continues to exist for additional information, both conceptually and specifically, on the relationship between instructional leadership behaviors and pupil performance. The development of school profiles, which are used to organize data and instructional leadership behaviors at six schools in a district, will provide principals the opportunity to reflect upon research, theory, and context so that leadership decisions may be more informed in their individual schools.

Process Spelling

Although more than three-quarters of the District's primary teachers were piloting the new spelling program during the 1998-99 school year, the Cast-A-Spell program was formally adopted by the Bozeman Public Schools for the 1999-00 school year, and the

program name for the District was changed to Process Spelling. Two years after formal adoption of the curriculum, with four years of in-service instruction for some teachers and three years of assessment and instruction for students, informal interviews with the Curriculum Director (T. Baldus, personal communication, April 18, 2001) and the Assistant Superintendent of the Bozeman Public Schools (R. Gutzman, personal communications, April, 24, 2001; August 17, 2001) indicate satisfaction with the Process Spelling program, but suggest that additional information regarding principal leadership at the various elementary school sites would be beneficial to help increase effectiveness of implementation and the overall curricular adoption.

Test Scores

The need for additional information stems from inconsistencies within and among elementary schools in the Bozeman Public Schools in the Comprehensive Test of Basic Skills (CTBS) percentile gain scores, as noted in Appendix A, and a lack of understanding of how the national percentiles may be correlated to the District's other spelling assessment, the Test of Written Spelling (TWS-3). Variability in third grade CTBS national percentiles among the six elementary schools over the last four years and associated percentile differences between April 1998 scores and March 2001 scores are noted in Table 1. Mean scores and achievement score growth differences appear to vary among the six schools.

Table 1. Mean national percentiles for grade three for spelling over the last four years according to the CTBS (Bozeman Public Schools, 2001a).

<u>School</u>	<u>Grade 3</u>				<u>Difference</u>
	<u>4/98</u> <u>Mean</u>	<u>4/99</u> <u>Mean</u>	<u>4/00</u> <u>Mean</u>	<u>3/01</u> <u>Mean</u>	
School 1	65	62	61	64	-1
School 2	51	62	60	64	+13
School 3	83	77	64	50	-23
School 4	46	57	52	65	+19
School 5	68	70	66	76	+8
School 6	32	50	52	48	+16
District	58	64	60	64	+6

In October 1998, the District adopted the use of the TWS-3 which provides pre- and post-test scores for students in grades 1 through 5. It was selected for use because of the pre- and post-test protocol, with the expectation that such student data would provide information on the effectiveness of the Process Spelling curriculum. The TWS-3 is administered to all students, grades kindergarten through 5, as opposed to the CTBS which, since 1997, is not administered to students below grade 3. Thus, the TWS-3 was adopted one year prior to the formal adoption of Process Spelling.

Mean post-test TWS-3 scores for grade three students for the 1998-99, 1999-00, and 2000-01 school years are shown on Table 2. Mean standardized scores and standard deviations are provided in Appendix A for grades 1 through 3 for the 1998-99, 1999-00, and 2000-01 school years.

Table 2. TWS-3 mean post-test scores for grade three for the 1998-99, 1999-00, and 2000-01 school years (Bozeman Public Schools, 2001b).

<u>Grade 3</u>			
<u>School</u>	<u>1998-99</u> <u>Post-Test Score</u>	<u>1999-00</u> <u>Post-Test Score</u>	<u>2000-01</u> <u>Post-Test Score</u>
School 1	105.8	109.7	108.9
School 2	112.1	105.8	110.7
School 3	105.7	108.8	101.3
School 4	94.3	104.3	103.7
School 5	106.4	112.8	118.3
School 6	101.0	105.4	105.0

With limited time and resources in the Bozeman Public Schools, instructional leadership practices and beliefs must be chosen carefully by the principal. The student as learner is the key to any successful curricular implementation. Policymakers continue to demand “nationally validated test accountability” (Orlich et al., 1993, p. 2), and in an operational sense, the Bozeman Public Schools’ Board of Trustees, administrators, teachers, and families expect student achievement levels in spelling to be raised through the use of Process Spelling. Change in teacher behavior is an outcome of effective staff development programs (Sousa & Donovan, 1993), yet gains in pupil performance provide the operational definition for program effectiveness for practitioners, policy-makers, and the public.

Educational decision-makers need to make informed planning and action decisions based on information from data-based research. Principals, as reflective practitioners, need specific data regarding their schools and their own leadership practices and beliefs in order to most effectively implement curriculum and impact student performance. In this case, the elementary principals in the Bozeman Public

Schools would benefit from examination of school-specific trends in spelling achievement data and instructional leadership practices and beliefs in order to gain perspective about how their behaviors are impacting pupil performance in spelling.

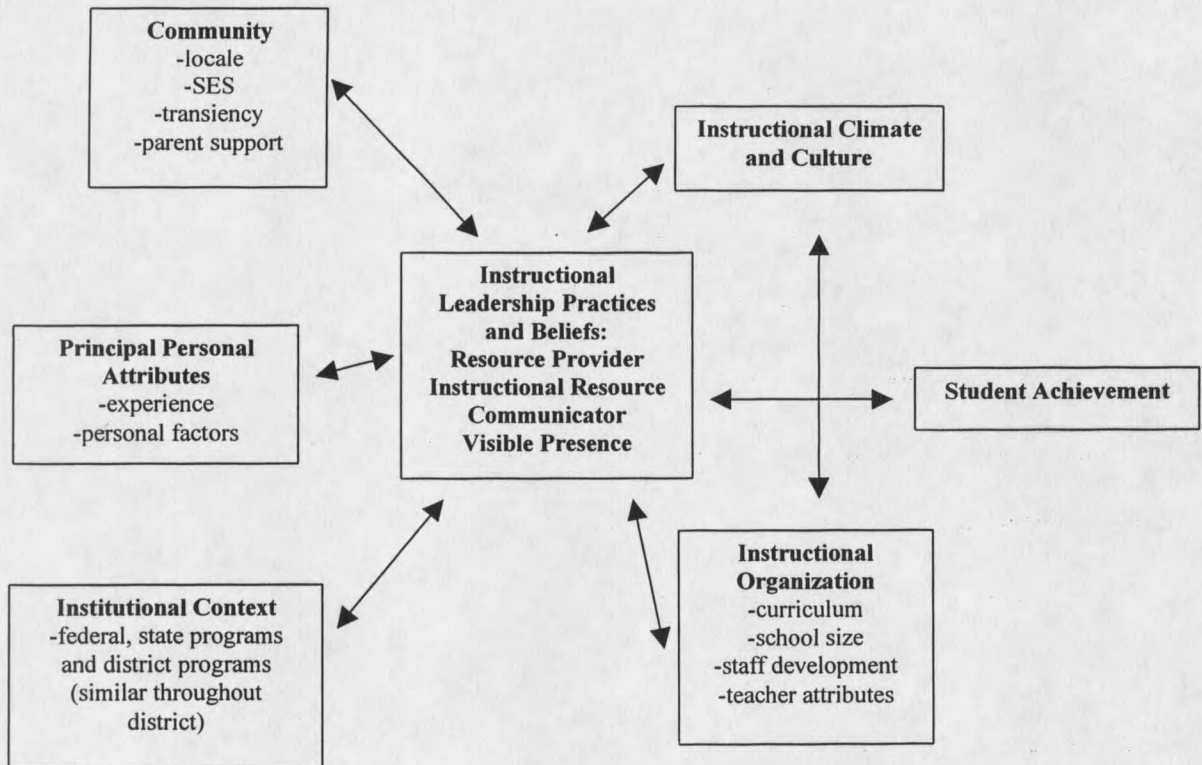
Conclusion

Since research suggests no direct link exists between principal behavior and student achievement, Figure 1 proposes relationships between principal instructional leadership variables and spelling achievement in the Bozeman Public Schools. A variety of factors may influence principal instructional leadership behaviors. In addition to personal characteristics of the principal, school size, and community culture often impact instructional organization. Instructional leadership behaviors influence school climate and school climate also influences those leadership behaviors. Additionally, federal, state, and district programs may impact instructional operations of a principal. Instructional organization is related to leadership activities and climate. Reciprocal relationships also exist. Ultimately, student achievement, in this case spelling, is impacted, with the principal's instructional leadership contributing to student achievement directly through principal behaviors, or indirectly through the establishment of school climate and instructional organization.

Through the use of surveys, interviews, test data, and specific school information, individual school profiles and associated instructional leadership activities were developed. This grounded theory study resulted in a model for the Bozeman Public Schools.

Figure 1. Proposed model of principal instructional leadership variables influencing student spelling achievement in the Bozeman Public Schools, based on models by Bossert, Dwyer, Rowan, and Lee (1982) and Reyes and Capper (1991).

The following propositions provide the theoretical foundations of this study:



1. All school improvement and professional development efforts should provide for improved student learning outcomes (Guskey & Sparks, 1996; Speck, 1996).
2. Professional development is a continual process. According to Speck (1996), "Professional development is a multiple, diverse, and on-going process, not a one-shot approach" (p. 35).
3. The instructional leadership of the principal is essential to any effort to improve professional practice (Wood & Thompson, 1993; Speck, 1996).

4. Systematic support for teachers, including coaching, is necessary for the transfer of learning from training into daily practice (Speck, 1996).
5. Efforts by teachers to grow professionally should be recognized by an effective instructional leader.
6. Instructional leadership should support instructional and program improvement. Professional development should be linked to instructional practice, teacher evaluation, and curricular implementation.
7. Teachers in a school setting often learn from colleagues within their school (Darling-Hammond & McLaughlin, 1995; Lieberman, 1995).
8. Teachers need opportunities at school to discuss, experiment with, and enhance new practices (Darling-Hammond & McLaughlin, 1995; Lieberman, 1995).

Research supports an array of specific activities involved in instructional leadership which are woven into the job demands of the principal. Whether by design or incidentally, instructional leadership activities by principals, in support of curricular implementation like the Bozeman Public Schools' Process Spelling program, affect instruction and, ultimately, student achievement. In Chapter 2, a review of the literature is provided. The review provides conceptual background, a theoretical foundation, and a research base for interpreting what is known about the relationship between instructional leadership activities and student achievement.

CHAPTER 2

REVIEW OF THE LITERATURE

This study examines the instructional leadership role of the elementary principal as a means for the promotion of pupil performance in spelling. Therefore, this chapter is divided into eight main sections: Instructional Leadership; Staff Development; School Contextual Factors; Links to Student Achievement; Spelling; Naturalistic Inquiry; Grounded Theory; and Summary. The first section focuses on instructional leadership by considering definitions of instructional leadership, information on practices of effective principals with respect to instructional leadership, and principal experience and instructional leadership. The second section discusses staff development by first presenting definitions of staff development, and then expanding on the topic by reviewing the literature related to conditions necessary for successful staff development, the purpose of staff development, and characteristics of effective staff development programs. The third section discusses school size and socio-economic status (SES) as contextual factors. Because this study focuses on the relationship between instructional leadership practices and beliefs and student achievement, the fourth section discusses research concerning student achievement and its link to staff development, instructional leadership principal experience, and school context factors. The fifth section provides an overview of spelling, including the development of spelling, principles of instruction and spelling assessment,

and spelling in the Bozeman Public Schools. The sixth section discusses naturalistic inquiry and the constructivist paradigm, and provides a rationale for the research paradigm used in this study. The seventh section describes the grounded theory research design. The final section provides a summary of the chapter.

Instructional Leadership

What Is Instructional Leadership?

Five essential categories describe instructional leadership activities in which principals engage: definition of a mission; management of curriculum and instruction; supervision of teaching; monitoring of student progress; and the promotion of an effective instructional climate (Krug, 1993). As managers of curriculum and instruction, school principals must have knowledge of curriculum and understand the instructional needs of each content area.

According to Krug (1992), in the constructivist perspective, an effective instructional leader is able to strategically apply knowledge to solve contextually specific problems so that, through its members, a school may work toward its vision and goals. The principal, as the supervisor of teachers, the entities of the school that directly fulfill the mission of the school, must focus on staff professional growth. Principals and teacher-leaders must view themselves as teachers of adults, and must view the growth of others as one of their most important functions.

Effective principals must have a clear sense of the vision for their school and an understanding of the professional practices and tenets to lead toward that end. One of the

goals of school leadership is to build a professional culture. According to Kouzes and Posner (1995), leaders “set an example, inspire a shared vision, enable others to act, and model the way” (p. 1). A professional culture is how principals enable teachers to act, i.e., accomplish instructional objectives to positively impact pupil performance. Culture represents the values which bind people together and is the framework of beliefs which provide the foundation by which people in an organization behave (Sergiovanni, 1995). Marsh (2000) writes that teachers who will be able to significantly improve teaching and learning will do so because the principal uses a new form of leadership which provides “substantive and cultural leadership to the transformation of the school linked to the high performance organizational arrangements that support the results-driven collective focus” (p. 143).

According to Hallinger and Murphy (1987), instructional leadership is context dependent, and principals should consider the impact of their school’s clarity and complexity on curriculum and instruction. By assuming an active and central role in the coordination of curriculum, and by providing leadership in professional growth opportunities, principals may increase effective coordination of curriculum and instruction. Hallinger, Murphy, Weil, Mesa, and Mitman (1983) provide a model of instructional leadership which includes three general categories: defining the school’s mission; managing curriculum and instruction; and promoting a positive school learning climate. Cawelti (1987) posits a simple formula for instructional leadership:

Clear Goals + Strong Incentives + Appropriate Skills = Instructional Leadership.

Practices of Effective Principals with Relation to Instructional Leadership

Blase and Blase (1999), in a study of over 800 elementary and secondary teachers from schools in the southeastern, midwestern, and northwestern United States, sought to discover the characteristics (e.g., strategies, behaviors, attitudes, goals) of instructional leaders which positively influence classroom teaching. The researchers also examined the personal and professional effects of leader-teacher interactions and whether staff development played a major role in influential instructional leadership. Using a data collection and analysis protocol based on symbolic interaction theory, which emphasizes individual perception and interpretation, data analysis produced three primary themes of effective instructional leadership: talking with teachers, promoting teachers' professional development, and encouraging teacher reflection.

Providing feedback was important to teachers. A study participant reported, "Feedback builds my efficacy. My supervisor reinforces the fact that I am a teacher. As I collaborate with her, I learn more about my teaching" (Blase & Blase, 1999, p. 361).

Smith and Andrews (1989) categorize general descriptors of instructional leadership into four dimensions: the principal as resource provider; the principal as instructional resource; the principal as communicator; and the principal as visible presence. As resource provider, the principal provides for personnel, materials, data, facilities, and budget to achieve school goals. Opportunities for professional development are provided with careful consideration of school priorities in order to maximize instructional effectiveness and student achievement. As instructional resource, the effective principal is actively involved in all aspects of the instructional program, which

includes setting expectations for continuous improvement and collegiality, modeling the kinds of behaviors desired, participating in in-service training with teachers, and consistently giving priority to instructional concerns (p. 13). The effective principal has a clear vision of school goals, and as communicator, articulates those goals through programmatic decisions which impact school activities. Interactions with staff and students provide opportunities for the principal to be "the keeper of the vision" (p. 18). High visibility includes frequent classroom observations, accessibility, and active participation in professional development activities with staff.

Sergiovanni (1987) describes the principal as a clinical practitioner who brings expert professional knowledge to teaching, program development, and supervision. Blum, Butler, and Olson (1987) cite a 1984 synthesis of research on the practices of effective principals in which establishment and maintenance of curricula related to goals and priorities, knowledge of quality instruction, active involvement with staff on the improvement of instructional skills, and continual monitoring of school performance are critical components.

According to Hallinger and Murphy (1985), three dimensions of instructional management exist for the principal: (1) definition of the mission; (2) management of the instructional program; and (3) promotion of school culture. In defining the mission of the school, the principal frames and communicates the school goals. Management of the instructional program consists of supervision and evaluation of instruction, coordination of curriculum, and the monitoring of pupil progress. Protection of instructional time, promotion of professional development, high visibility, provision of teacher incentives

and student incentives, and enforcement of academic standards are included in the promotion of school climate. However, most studies find little variation in the allocation of time to instructional versus noninstructional tasks between principals (Deal, 1987).

Blase and Blase (1999) constructed the Reflection-Growth (RG) model of instructional leadership, and noted that principals who were effective instructional leaders provided formal staff development opportunities to address instructional needs. Principals described in their study recognized the importance of the development of teachers as collaborative learners, and how collaborative networks could be expanded through staff development. To accomplish this, principals modeled a philosophy of teamwork, provided regular time for collaborative endeavors, and advocated sharing and peer observation and peer coaching. Principals' teacher development strategies included: (a) emphasizing the study of teaching and learning; (b) supporting collaboration efforts among educators; (c) developing coaching relationships among educators; (d) encouraging and supporting redesign of programs; (e) applying the principles of adult learning, growth, and development to all phases of staff development; and (f) implementing action research to inform instructional decision making (Blase & Blase, 1999, p. 363). Professional development opportunities were provided to staff based on teacher input. Effective instructional leadership included optional attendance in staff development activities as well as active participation of the instructional leader (Blase & Blase, 1999).

Staff development opportunities may come from within the school itself in the form of a teacher-leader. According to Berry and Ginsberg (1990), the development of

teacher leadership roles has become a key element in recent initiatives involved with school change. With teacher leadership, the principal and the teacher come together to address instructional leadership in the school in a true collaborative effort. Smylie and Denny (1990) suggest that "the definition and performance of teacher leadership roles may be influenced substantially by the organizational contexts in which they are established" (p. 256). Smylie and Brownlee-Conyers (1992) note that "principals are in first-order positions to block, to support and facilitate, and to shape the nature and function of teacher leadership in their schools" (p. 151). Short, Greer and Melvin (1994) report the lead teacher as being a key influence in assisting the principal in building site support for change.

Glickman et al. (1995) note five primary tasks of instructional leadership: direct assistance to teachers; group development; staff development; curriculum development; and action research. The interaction of these tasks brings teachers' needs together with school goals. Pajak (1989) generated additional tasks of instructional leadership, including planning, organizing, facilitating change, and motivating staff.

More recently, Pajak (1993) concludes that in today's schools, seen as democratic teaching and learning communities, learning is viewed as contextual and teaching is based on reflective practice. In this vein, instructional leadership in the form of dialogue and constructivism, as opposed to reinforcement of specific, prescribed teacher behavior and skills, takes on heightened emphasis.

Instructional leadership, according to Schön (1988), underscores collegial classroom observations and focuses on support, guidance, and encouragement of

reflective teaching. Such a conception of instructional leadership is collaborative and supportive, and relates directly to a school plan. However, Gordon (as cited in Blase & Blase, 1999) views instructional leadership, in practice, as limited to inspection, oversight, and judgment of classroom instruction.

Principal Experience and Instructional Leadership

Bridges (1982) notes personal factors, i.e., attitudes and experience, and role-related factors, including expectations and power, as being related to principal leadership behaviors. According to Hallinger and Heck (1996), one category of antecedents to leadership practices and beliefs concerns experience factors. Research supports increased teacher respect of principals according to their years of classroom experience (Sellars, 1988; Harchar & Hyle, 1996). Bista and Glasman (1998) found teaching experience to be “the single most important predictor of leadership flexibility” (p. 121) based on a multiple regression analysis with teaching experience and leadership flexibility significant with a beta weight of .263. However, Sarason (1996) suggests the amount of time a teacher has spent as a “leader of children” does not “necessarily prepare one for being a leader of adults” (p. 141).

Bista and Glasman (1998) identified three experience variables: formal educational experience; teaching experiences; and administrative experience. Weak and nonsignificant correlations between site experience and leadership were found.

Orange (1990) took a different view. In a study of 64 Kentucky elementary schools who had had the same principal for four or more consecutive years, principals

with five to nine years of principal experience were rated to have significantly higher instructional leadership behaviors than principals with more than 15 years as a principal (p. 98). In addition, those principals with five to 15 years of teaching experience had more instructional leadership behaviors than principals with less than five years or more than 15 years as a teacher (p. 15).

Impacts of principal experience and attitudes may be related to the specific school environment and the specific school personnel. While increased experience as a teacher may provide for heightened credibility among teaching staff, effective leadership abilities may not be related to experience. Increased administrative experience may be viewed positively or negatively with regards to instructional leadership practices and beliefs.

Staff Development

The call for educational reform, influenced by increased intervention from federal, state, and local governments, heightened activity of pressure groups, increased public expectations, and community social and economic problems, paired with a reluctance to pay for needed improvements, has placed enormous pressure on districts and schools to ensure initiatives succeed. Curriculum frameworks, revised instruction and assessment standards, and other school reform approaches may provide benefits in the educational arena. Many reforms involve formidable modifications of current pedagogical practice. To meet these new expectations, teachers and administrators must expand their knowledge base and learn new methods of instruction. Leaders in the field and practitioners recognize that “the key to student growth is educator growth” (Joyce &

Showers, 1995, p. xv). Districts and schools must then, very carefully, select the types of staff development that will be made available to teachers in order to be most efficient and effective in delivery of content, and ramifications for teachers and, ultimately, students. The selection and implementation of staff development is a large aspect of instructional leadership.

Definitions Related to Staff Development

The terms "staff development" and "professional development" have evolved over a period of two decades, and are regularly used interchangeably in the literature. Current ideas regarding education reform are based on new concepts related to the practices of teaching and learning. Conventional staff development, however, has focused and continues to focus on helping teachers assimilate new techniques into an existing system of pedagogy and subject matter knowledge. Staff development tends to center on reactive, as opposed to proactive growth.

Staff development may be defined as those processes that improve the job-related knowledge, skills, abilities, or attitudes of school employees (Sparks & Loucks-Horsley, 1989). According to Griffin (1983), staff development programs serve to "alter the professional practices, beliefs and understanding of school persons toward an articulated end" (p. 2) and "advance the knowledge, skills, and understanding of teachers in ways that lead to changes in their thinking and classroom behavior" (Fenstermacher & Berliner, 1985, p. 283).

Much current practice in the area of professional development is based on faulty assumptions. The traditional model of "sit and get" in-services has been shown to be only marginally effective (Sparks & Loucks-Horsley, 1989; Wood & Thompson, 1993). In this model, administrators or a staff development unit from central office determine the in-service program for the two or three days at the beginning of the school year the district provides as part of its teacher bargaining agreement. Workshops for teachers regarding a district priority or, often, a menu of workshops from which teachers may choose based on their interests are provided by outside "experts." The school year begins, with perhaps another mid-year in-service day or two following. In the meanwhile, teachers focus on staying current with grading, report cards, and parent contacts; and principals focus on day-to-day school management issues. The workshop information becomes forgotten in the midst of everyday work-related responsibilities, and negative attitudes about the training may develop. Predictably, as Wood and Thompson (1993, p. 53) state, there is "little effect on professional practice, and no significant improvement on student learning."

The vision for staff development, as it has evolved over the past several years, has become one in which staff development is job-embedded. To change teacher instructional practices so student achievement may be affected, professional growth must now be viewed as something which must occur as part of the regular school day. Such activities should be part of the professional culture of the school (Saphier & King, 1985; Sizer, 1984).

In-service training typically specifies school-based workshop-type programs. Over the past 20 years, in-service training has evolved from “irregular, episodic workshops organized by outsiders to the school” (Macrostitie, 1994, p. 203) to programs that are continuous, grounded in and linked to a clearly articulated conceptual framework, related to classroom activities, flexible, and able to accommodate teachers who prefer to manage their own professional development.

“In successful programs, staff development is more than a workshop, it is a process,” writes Asayesh (1993, p. 24) and quotes University of Kentucky education professor Thomas R. Guskey, “Consistent follow-up and support in staff development seem to be critical, even more important than the initial training” (p. 24). Continual staff development plays a central role in systemic change. Joyce (1990) sums up staff development by referring to staff development as “the force for changing the culture of the school and the ethos of the education profession” (p. xviii).

Conditions Necessary for Successful Staff Development

Sparks and Loucks-Horsley (1989) identify characteristics of organizations in which staff development is most successful:

1. Staff members have a common, understandable set of goals and objectives that they helped create. The goals reflect high expectations for everyone involved in the school, i.e., students and staff.
2. A norm of collegiality is promoted by school leadership. Status differences between staff members and administrators are minimized so that informal

communication exists. While formal controls to achieve coordination are present, an autocratic climate does not exist.

3. There exists a norm of continuous improvement for all. Administration and staff place high priority on professional development. Both formal training programs and informal sharing of knowledge are promoted.
4. Progress toward goals is monitored via formal and informal processes.

Administrators and teachers use such evaluative processes to identify obstacles to progress and to determine ways to overcome these obstacles.

Successful staff development tends to operate on multi-levels in a school organization (Glickman et al., 1995). Teachers, individually, and the staff, collectively, define, implement, and monitor knowledge and programs that support the goals of the school.

Purpose of Staff Development

Effective implementation of instructional programming demands strong professional development programs (Fullan & Stiegelbauer, 1991; Joyce & Showers, 1995; Wood & Thompson, 1993). A comprehensive examination of implementation practices was undertaken by the Rand Corporation. Although somewhat dated, the study remains relevant for its groundbreaking examination of implementation practices and consequences. From 1973 through 1978, the Rand Corporation, under the sponsorship of the United States Office of Education, undertook a national study of federally funded programs to public schools which promoted innovative practices. Researchers investigated staff development using outcome measures such as changes in teacher

practices, student growth, and teachers' continued use of project methods and materials after termination of funding (McLaughlin, 1991).

Four prominent domains were identified: institutional motivation, project implementation, institutional leadership, and teacher characteristics. Motivation to participate in the study was an explicative factor in teachers' commitment and effort spent in project implementation. Project implementation strategies, i.e., the site-based action plans, dramatically affected project efforts and teacher professional development. The study indicated that decisions which determined the ways in which staff would be assisted and supported in acquiring new skills were critical. Much of the observed variation in project success and continuation was due to training and support activities. Researchers found skill-specific training only impacted student gains and project implementation on short-term bases and concluded that skill-specific training, in the absence of other support activities, did not support teachers' long-term assimilation and integration of project methodologies.

In the area of institutional leadership, higher percentages of project goals achieved and greater student performance were reported as a result of more effective project directors. Projects that included principals who were perceived by teachers as unsupportive of the initiatives scored poorly on outcome measures of the study. Of particular significance was the long-term effect on project investments and activities, i.e., the support of the principal was directly related to the likelihood that teachers would continue the project in part or in its entirety after funding ended. Thus, it may be inferred the principal provides "sometimes subtle but nonetheless strong messages about the

legitimacy of project operations in a school” (McLaughlin, 1991, p. 66).

With regard to the final domain, teacher efficacy, i.e., teachers’ belief in their effective instruction, was noted to be the most powerful individual teacher characteristic. Other teacher characteristics included age, educational background, years of experience, and verbal ability.

One example of programming in schools is curriculum. School curriculum affects what students learn, and student performance may be viewed as an outcome of their engagement in schooling. Curriculum is an area included in school change efforts. Other school change areas include instructional delivery, governance, and behavior management programs. Levine and Lezotte (1990) and Levine (1991) have attempted to determine causal connections of changes in schools to changes in student achievement. Teacher behaviors and student performance in individual classrooms have been documented, and qualities of effective teachers abound in the literature (Glickman, Gordon, & Ross-Gordon, 1995).

Providing teachers with opportunities to be involved in learning about, developing and using new ideas with their students can occur by building new roles, inventing new relationships, creating new structures, working on new tasks, and creating a culture of inquiry. Each of these methods requires time. They actually become part of the expectation for the teacher’s role, and part of the culture of the school. Teacher learning and development become varied and exciting as teachers create learning experiences for students. Several types of professional development may be used, either singly or in concert.

Individually-guided staff development is based on the assumptions that individuals are best able to determine the direction their learning should take and that adults are able to initiate such learning. The relevancy to the individual is what drives effective learning. The Concerns-Based Adoption Model (Hall & Hord, 1987) specifies differing levels of awareness and anxieties as part of a continuum of learning and change for teachers. The principal, as instructional leader, must facilitate the individualization of professional development for teachers based on their differing needs.

Since teaching typically does not occur in the presence of other adults, teachers are not able to benefit from the observation of others. In fact, because peer observation is so rare, it is linked only with evaluation, and thus, for teachers, tends to have a negative connotation. However, according to Sparks and Loucks-Horsley (1989), if undertaken in a culture of inquiry, the experience results in positive changes which often leads to additional observations and additional improvement efforts.

Glickman et al. (1995) suggest a tiered feedback approach after observations based on the cognitive levels of the participating individuals. Feedback conferences may be directive, collaborative, or non-directive, in which case the observer assists the teacher in problem clarification and in choosing a plan of action.

Teacher involvement in a development or school improvement process is another means towards professional growth. Knowles (1980), an adult learning theorist, posited that adults learn most effectively when confronted with a problem to solve or a desire to know a particular thing. It is this intellectual engagement that Glickman et al. (1995) see as critical to staff development efforts. Glatthorn (1987) recommends activities such as

these be conducted in groups. Erickson's theory posits a continual search for identity (Merriam & Caffarella, 1991). In a school environment, this means that activities which focus on interaction and reflection will balance an adult's focus on self-awareness and intimacy. A principal can use such knowledge by grouping individuals appropriately so that ideas about teaching and learning will be maximally shared. McLaughlin (1991) cites the findings of the Rand Change Agent Study, which found that regular and frequent project meetings provided support for teacher change and continuation of the project because of the opportunities such meetings provided for teachers to collectively use their expertise to inform project decisions. Teachers' sense of ownership in the change process was also increased.

Training in the form of coursework or workshops is perhaps the most traditional type of professional development activity. Such in-service workshops and seminars are forms of direct instruction. This is an instructional model for adults quite similar to a standards-based student curriculum. According to Joyce and Showers (as cited in ENC, 1999), some use the "training" model which has a strong research base. This model includes several steps: (1) explanation of theory; (2) demonstration or modeling of a skill; (3) practice of the skill under simulated conditions; (4) feedback about performance; and (5) coaching in the workplace.

Advantages of this training model include the engagement of teachers as learners, the creation of opportunities for exploring their own conceptions and the research base through a variety of learning opportunities, and the creation of applications to the learners' own teaching (ENC, 1999). However, a strong research base in teacher change

exists which shows that one-time workshops are unlikely to result in significant long-term change (Corcoran, 1995).

Showers, Joyce, and Bennett (1987) write about the purpose of training and state that it "...is not simply to generate the external visible teaching 'moves' that bring that practice to bear in the instructional setting but to generate the conditions that enable the practice to be selected and used appropriately and integratively" (pp. 85-86). They describe it as "a major, perhaps the major, dimension of teaching skill that is cognitive in nature" (p. 86). Thus, the "sit and get" model becomes a foundation for new knowledge and may prime the intellect to further explore a theory or investigate actual classroom practice.

The principal's role is to decide upon a body of training as it relates to the goals of the organization, or better still, to delegate such responsibility to a shared decision making body. According to the results of a survey by Yarger, Howey, and Joyce (1980), teachers indicated that their principals should participate in in-service activities along with them. Research by Blase and Blase (1999) show similar findings.

Inquiry is a combination of individually-guided development and involvement in a development process, in that it reflects a basic belief that adults have the ability to formulate questions and to pursue objective answers to these questions. As a result, adults will develop new understandings based on their questions and the data they collect. Lieberman (1986) has reported on an inquiry process in which teachers served on collaborative teams to solve school-wide problems as opposed to classroom problems. Glickman et al. (1995) advocate the use of quality circles, problem-solving groups, action

research, and school improvement processes as ways to stimulate and develop teacher thought.

Organizational support from the principal includes the structuring of such activities, i.e., provision of the time and teaming required. If staff members are to learn and grow with each other and make informed decisions together, they need a time and place for these activities to occur. Principals must provide for common planning time or release time and group teachers so that collegial discussion may occur. Resources and technical assistance in the form of data-gathering techniques are also necessary.

The distribution of professional literature and journal articles, inviting critical discussion of research and trends, supporting attendance at workshops and conferences, and focusing professional development sessions and conversation “squarely on teaching and learning issues” (p. 6) is supported by Blase & Blase’s (1999) study. Such activities resulted in increased teacher motivation and teacher reflection, and “reflectively informed instructional behavior” (p. 6). In addition, effective instructional leaders provided training in data collection and analysis in order to promote teacher action research.

Peer coaching, cognitive coaching, peer mentoring, and teacher leadership are similar avenues toward building leadership capacity in a school. Showers and Joyce (1996) describe peer coaching as sharing aspects of teaching by planning together and pooling experiences. In a peer coaching situation, pairs of teachers observe each other, the one who is teaching is the “coach,” and the one who is observing is the “coached” (p. 15). Macrostie (1994) cites a 1980 study by Yarger, Howey, and Joyce in which teachers described peer observation and feedback as necessary components of effective staff

development so that discussion and analysis of instructional practices could be discussed with other teachers as opposed to a supervisor. Peer mentoring is a form of coaching in which a more experienced teacher provides guidance for a less experienced teacher. Blase and Blase (1999) reported evidence indicating that effective instructional leaders advocated coaching among teachers by encouraging master teachers to serve as models for other teachers. Lipton and Greenblatt (1992) exhort coaching, which “promotes trusting, collaborative relationships, accelerated learning, enhanced resourcefulness as decision makers, complex thinking, and community among district staff” (p. 24).

Teacher leadership, unlike coaching, focuses on a single teacher assisting many teachers, as in a department, grade level, or school. Teacher leadership is aimed at achieving particular objectives, which may include “improving professional learning opportunities for other teachers, engendering collegiality and collective responsibility among school staff members, and promoting classroom and school improvement” (p. 157).

Characteristics of Effective Staff Development Programs

In discussing the type of staff development that promotes student growth, Showers (as cited in Asayesh, 1993) states the program must be

intensive enough to allow people to develop new knowledge and skills. And it has a component in the workplace as well as in the training environment. Somehow there's a support system that follows teachers into the workplace and either provides continuing training or some kind of structure enabling teachers to continue solving problems in the workplace.

She continues,

A real effective staff development program will have a whole series of characteristics...It'll have intensive training, there'll be ongoing support at school site, people will have some sort of structure at the school site for continually working on the implementation and solving any problems that result, and there'll be some sort of formative data collection and evaluation along the way so you can tell how you're doing and make adjustments. There'll be data not only about implementation but about student outcomes (p. 25).

Selection of a staff development plan should be correlated to the district or school-wide goals, have a strong research base, operate in a format that provides ongoing training with repeated practice and feedback, allow frequent opportunities for teacher dialogue and sharing as part of the process, and include a well-articulated evaluation component (DuFour, 1991, p. 650).

Principal leadership is critical for all aspects of a staff development program. Lambert (1995) writes, "A primary role of the constructivist leader is to lead the conversations...The principal should seek meaning-making interactions" (pp. 83-84). Blase and Blase (1999) note such interactions lead to enhancement of teachers' reflective behaviors, as well as increased self-esteem and efficacy.

This type of empowerment is incumbent upon the principal to maintain. Sergiovanni (1995) lists three dimensions to enablement: (1) the empowerment of teachers by providing them the discretion they need to function autonomously; (2) the provision of support and training teachers need to function autonomously; and (3) the removal of the bureaucratic obstacles that keep teachers from being autonomous (p. 134). In Lambert's (1995) view of the constructivist leader, reciprocal processes enable participants in an educational community to construct meanings that guide a common

vision. The focus should be on collaboration. She states, "As professionals find new meaning in their work together, the patterns of relationships and the structures change" (p. 53).

Collaboration is essential. Goodlad (1984) found teachers seldom have the opportunity to engage in collaborative work with their colleagues. Isolation is a rampant problem for teachers, and is frequently cited in research (Fullan, 1990). Collaboration must be made a norm for the school. Teaming for collaboration can be accomplished in a variety of ways: grade level or subject; similar teaching assignment; interdepartmentally; school-wide task forces; or by area of professional development (DuFour, 1991, pp. 36-37).

Elam, Cramer and Brodinsky (as cited in DuFour, 1991, p. 38) summarized strategies principals might use to increase collaboration:

- developing partnerships with teachers to work for improved instruction;
- gearing principal-teacher conferences toward problem-solving;
- encouraging self-improvement for teachers;
- attending training sessions as partners in learning with teachers;
- fostering a sense of experimentation to allow teachers freedom in the classroom to try new techniques;
- viewing the teacher as the expert;
- facilitating shared decision-making organizational structures as related to staff development;

- conducting faculty meetings which are, in part, learning and self-improvement opportunities; and
- promoting teachers' feelings of professional pride and self-efficacy.

These strategies neatly fall into categories of instructional leadership put forth by Smith and Andrews (1989). Commitment to the effort from participants is essential. While principals hope for commitment at the front end, commitment can come after the program is underway. DuFour (1991, p. 63) writes that research shows early teacher involvement in the planning of staff development programs has little or no correlation to the success of the program. However, according to Glickman et al. (1995, p. 337), collaborative planning, as viewed as one aspect of shared decision-making at the site, is often cited as a characteristic of a successful program. Sparks and Loucks-Horsley (1989) suggest that teacher commitment gained after teachers are engaged in the new practice is valuable if the practice is user-friendly, and if the teachers see that it does make a difference in student learning.

To truly institutionalize the benefits of a staff development program, it is the principal's responsibility to put rules, procedures, and changes in organizational structure in place that facilitate actions and provide balance. Implementation of such changes in organizational structure will lead to permanence of the benefits of professional development activities and continued efforts of improvement.

According to Wood and Thompson (1993), "because staff development is part of a system for improved practice within schools, it must be closely linked to supervision,

teacher evaluation” (p. 56). Hickcox and Musella (1992) believe the major change which must occur in staff development is that it must lead to greater accountability. Performance appraisal must be changed in order to strengthen the link with staff development. These changes must include a reduction of emphasis on accountability and adoption of procedures considered to be most important to staff development. The linkages made will be those of collegiality, professionalization, and trust.

Contextual Factors

Many factors in the school context have been applied to school research (Oakes, 1989; Pine, 1984; Clune, 1988; Corbett & D’Amico, 1987; Fyans & Maehr, 1987). School climate is described by Hoy, Hannum, and Tschannen-Moran (1998) as a global construct used to “group together studies of school environment, learning environment, learning climate, sense of community, leadership, academic climate, and social climate” (p. 343). Socio-economic status of schools is a factor which has been related to climate. Another school contextual factor that relates to this study is school size. Goodlad (1984) writes that most of the top-performing schools in his study were small. “It is simply more difficult” (p. 309) to have a good large school. According to Sergiovanni (1996), continuity of place and manageable scale are two conditions necessary to facilitate community building. In a review of eight studies related to school size, Berlin and Cienkus (1989) suggested smaller school sizes were better. However, Bista and Glasman (1998) reported a significant relationship between school size and the principals’ approach to leadership. Typically, principals in larger schools tended to use a political

approach to leadership, and that leadership focused on conflict management and building group identity (Bista & Glasman, 1998, p. 127).

Links to Student Achievement

Student Achievement and Staff Development

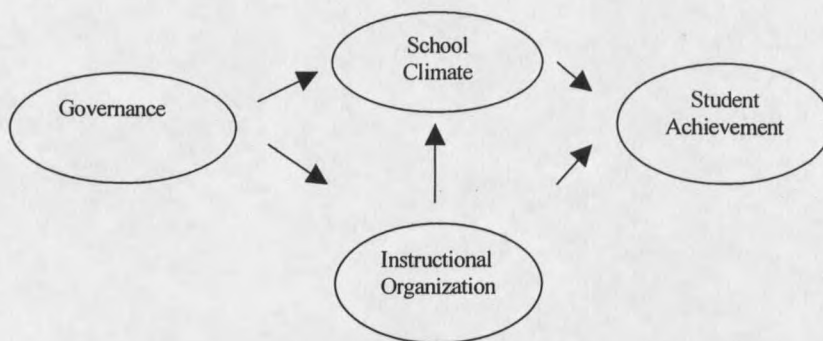
It is reasonable to begin an examination of the link between staff development and student achievement with the published evidence regarding the Madeleine Hunter (1976) model. Orlich et al. (1993) investigated five studies involving the Hunter Model, also known by Program for Effective Teaching (PET) and Instructional Theory into Practice (ITIP), and found reviews to be inconclusive. Mitchell and Salsbury's (1988) study in the state of Washington reported high teacher regard for the program, but effects on student achievement were not obtained.

A four-year longitudinal study by Stallings and Krasavage (1986) in Napa County, California, showed slight improvement in students' NCE and percentile scores in reading and math in the first three years, and in the fourth year, a decline in student achievement. The control students in the fourth year outperformed the treatment group in all categories for reading, and showed no significant difference in math. Overall, the increases in reading achievement and mathematics achievement were no greater than those achieved by control schools.

Orlich et al. (1993) suggest the link between staff development and student achievement has not been adequately established. Heck et al. (1990, p. 100) suggest that how the principal manages the school's internal and external political environments

directly affects the principal's instructional leadership behaviors, which impact the school's instructional organization and climate, and ultimately affect student achievement. In their theoretical predictive model (Figure 2), school climate encompasses school mission, goals, and creation of a positive learning climate. The instructional organization a principal chooses to develop directly impacts school climate.

Figure 2. Predictive Model of Principal Instructional Leadership Variables Influencing Student Achievement. (Heck et al., 1990)



In a study conducted by Donovan, Sousa, and Walberg (1987), students of teachers who participated in training and implementation sessions of ITIP did not achieve significantly better than students of nonparticipating teachers, although researchers found that students in classes of participating teachers had significantly more favorable attitudes toward school. A subsequent study by Donovan, Sousa, and Walberg (1992) which re-reviewed the 1987 research suggested that reading and mathematics achievement levels of students of participating teachers were significantly higher than those of students of non-participating teachers.

According to Mandeville (1989), PET training had no significant effect on student achievement. Another Hunter study conducted by Pasch and Harberts (1992) determined that gains in reading and mathematics of students of participating teachers were not significant when compared to students of non-participating teachers in the same grade.

While results involving the Hunter Model appear inconclusive, a Georgia study conducted by Joyce, Murphy, Showers, and Murphy (1989) showed that staff development resulted in higher overall student achievement. Promotion rates in one middle school rose from 30% to 70% after year one, and to 94% during the second year. Iowa Test of Basic Skills scores for eighth grade students were higher than expected projections based on their sixth grade, pre-project scores.

Slavin (1991), Sharan (1992), and Johnson and Johnson (1990) established a link between staff development and student achievement with regards to cooperative learning. Sharan and Shachar (1988) reported double gains between pre- and post-tests for students of teachers who were taught cooperative strategies as opposed to control students.

Student Achievement and Instructional Leadership

A two-year study of the relationship between principal leadership and student academic achievement in the Seattle School District (Andrews & Soder, 1987) suggests the principal plays an important role in the academic performance of students, and has most effect on low achievers. Their findings (1987) indicated a significant relationship existed between leadership and student outcomes across all schools for math and reading improvement. Separate analyses were completed for both high and low SES schools, and

significant relationships between leadership, math and reading outcomes for high SES schools were not present, but the relationships held for low SES schools.

Leithwood (1990) notes two patterns of principals' practice which support instructional leadership: a program focus and a student development focus, and further identifies three dimensions of teacher development that principals can influence: development of professional expertise; psychological development; and career cycle development. The development of professional expertise involves six stages of development, from basic teacher "survival skills" in the classroom, to a deep commitment to the goals of school improvement and participation in a wide variety of educational decisions at many different levels in an educational system. Leithwood (1990) provides guidelines with which principals may build professional expertise in staff, and underscores the importance of consistency in actions and decisions, so that routine administrative activities continually articulate linkages between instructional activities and school goals.

Student Achievement and Principal Experience

Several studies have investigated the link between years of principal experience and student achievement (Bista & Glasman, 1998; Parker, 1990; Adkins, 1990).

According to Parker's study in Missouri (1990), students in schools with principals in non-urban settings, with 10 or more years of administrative experience, scored higher on reading and mathematics achievement tests than students in schools with principals with fewer years of experience. Bista and Glasman (1998) reported similar findings in their

California study.

The relationship between principal site experience and student achievement as researched by Bista and Glasman (1998) and Heck, Larsen, and Marcoulides (1990) provide contrasting results. Bista and Glasman (1998) inferred the longer principals remained at a school, the more achievement scores dropped, based on a standardized coefficient of -0.18 ($p < .05$). According to Heck et al., principals with fewer years of site experience tended to be found more often in lower achieving schools, as opposed to high achieving schools.

Student Achievement and School Contextual Factors

Research suggests school context factors may be associated with student achievement. Two such factors are relevant to this study, i.e., school size and SES.

Studies specific to school size and student academic achievements are few. Bista and Glasman (1998) reported no significant relationship between school size and school performance. Lamdin (1995) found a minimal relationship.

Socio-economic status is measured by factors including parents' educational level, parents' occupations, household income, and location of residence (White, 1982).

Research has demonstrated SES as having a significant influence on student achievement (Mills, 1983; Reyes & Stanic, 1988; Sammons, 1995). According to Alspaugh (1996), cross-sectional studies based on correlational techniques account for most of the research concerning SES and student achievement. In a study that explored differences between reading and mathematics achievement for high and low SES elementary schools in the

midwest, Alspaugh (1996) found gaps of almost one standard deviation in mean reading and mathematics achievement levels as students progressed through elementary school. The achievement gap was reported to be larger in reading than in mathematics.

Spelling

Development of Spelling

In learning to spell, children tend to follow a predictable sequence. A child's spelling achievement is related to the developmental characteristics of a child's spelling. As a child's repertoire of spelling knowledge increases and as orthographic concepts mature, the quality of a child's misspellings change (Moats, 1995; Schlagal & Schlagal, 1992).

Through the use of assessment, researchers have developed different levels or stages of spelling development (Schlagal, 1982; Ganske, 1995). Children progress more rapidly in spelling and reading if they are taught how to analyze speech sounds in words and taught to spell those words using a system of sound-symbol correspondence (Tangel & Blachman, 1992; Uhry & Shepherd, 1993). This type of phonetic spelling is an important step in the early development of spellers and indicates readiness for formal spelling instruction, which includes the more difficult graphemes that create many word sounds. Children who are able to identify, sequence, and parse speech sounds, and who are able to make letter-sound matches, make more rapid progress in learning to spell.

Principles of Spelling Instruction

There are wide variations among researchers regarding the best method to teach spelling, stemming from controversy between researchers who contend that spelling is an extension of reading, and others who believe that it is a natural extension of writing (Fulk & Stormont-Spurgin, 1995). Spelling books and formal word study, in the form of weekly spelling lists, Friday spelling tests, and review units are promoted by traditionalists (Henderson, 1990; Templeton, 1991). Reformers eschew the needs for formal spelling book curriculum and rote learning of prescribed words. Rather, they recommend varied, rich writing opportunities for students and teacher responses to spelling errors through the use of mini-lessons (Wilde, 1990).

Recent research in spelling proposes specific recommendations for effective spelling programs which ultimately lead to the ability of children to proofread their own writing. Spelling instruction should consist of between 60-75 minutes per week, segmented into smaller blocks over a three- to four-day cycle (Opitz & Cooper, 1993; Templeton, 1991). Opitz and Cooper (1993) suggest systematic techniques for studying words and test-study sequences in which students correct their own tests. In addition, O'Flahavan and Blassberg (1992) recommend comparison and contrast of words to understand structural and semantic features.

Assessment of Spelling

Several important functional domains in spelling may be assessed. These are phonemic awareness, phonetic spelling ability, alphabet knowledge, spelling achievement

level, developmental level of spelling knowledge, analysis of errors, written composition, criterion-referenced assessment, and reading skill and phonic knowledge (Moats, 1995).

The CTBS tests spelling by having students identify the correctly spelled word among several words. The TWS-3 tests spelling through students' authentic spelling tasks.

Effective spelling tests possess several characteristics, i.e., a representative sample of the spelling domain, sufficient items to sample children's skill at their level of development, words representative of what children are expected to do and learn in school, concurrent validity, demonstrated reliability, and adequate norming.

Spelling in the Bozeman Public Schools

In the early through later 1990s, the elementary schools within the Bozeman Public Schools experienced low spelling scores, based on statewide and national norms, on their annual CTBS achievement tests (Robert Gutzman, personal communication, August 11, 2001). In 1997, the national percentile for grade 3 was 57, and the national percentile for grade 2 was 15; in 1998, the national percentile for grade 3 was 56, and the national percentile for grade 2 was 58 (Bozeman Public Schools, 2001a). No formal investigation had been undertaken to understand the root of the spelling challenges the students of the district faced.

Historically, the district's elementary teachers approached spelling instruction in a variety of ways, including basal programs, whole language inventive spelling, and teacher-generated spelling units. In the late 1990s, the district Curriculum Director, under the direction of the Assistant Superintendent, investigated spelling programs which would

serve the needs of the students and meet the needs of the district's instructional program. Diana Fontenault and Norma Salter, the creators of the Cast-A-Spell Program (1993), gave permission to the Bozeman Public Elementary School District to pilot their program during the 1998-99 school year. During the 1998-99 school year, several elementary teachers in the Bozeman Elementary School District agreed to the pilot. Fontenault and Salter provided staff training for interested elementary teachers in program philosophy and instructional process.

Teachers using the Cast-A-Spell Program are able to provide strategy-based training lessons that address the needs of a differentiated classroom (Fontenault & Salter, 1993). This process spelling program is based on the ability of the writer to use appropriate visual, auditory, and kinesthetic sensory systems. Presuppositions of the program include: (a) appropriate mental strategies learned by students will allow all students to learn to spell well; (b) student beliefs about and attitudes toward spelling will affect long-term memory of written words; (c) visual memory can be trained; (d) teachers can learn how to analyze, train, and alter student spelling strategies; and (e) first grade is the best time to begin teaching the spelling process. Process spelling supports the teaching of phonemic awareness, and provides training for the beginning speller in phonetic spelling. The program then focuses on visual memory training in order to facilitate the learning of strategies to spell phonetically irregular words accurately. Implemented correctly, process spelling instruction takes place daily, for 15-25 minutes, with consistent pacing and speed. The program manual (Fontenault & Salter, 1993) provides spelling lists, but teachers are encouraged to substitute their own spelling lists.

Fontenault and Salter emphasize, during their training workshops, the program must be followed as the manual directs. Spelling benchmarks for the process spelling program are:

By the end of first grade, the student will be able to:

- spell phonetically regular words using first grade phonic skills
- spell phonetically irregular words from science and social studies units
- spell 85% of the high frequency word list in first copy writing.

By the end of second grade, the student will be able to:

- spell phonetically regular words using second grade phonic skills
- spell phonetically irregular words from science and social studies
- spell 100% of the high frequency word list in first copy writing
- spell 25% of the “hard word” list
- edit their written assignments for errors
- identify “tricky” parts of a word and use submodality coding to recall the correct spelling for use in their writing.

By the end of third grade, the student will be able to:

- spell 100% of the high frequency word and “hard word” list
- edit their written assignments for errors
- identify “tricky” parts of a word and use submodality coding to recall the correct spelling for use in their writing
- use conventional spelling for words that have been read, but not taught, in the Cast-A-Spell program (Fontenault & Salter, 1993).

Naturalistic Inquiry

Creswell (1998) defines qualitative research as “an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem” (p. 15). Such a naturalistic paradigm offers a mode of inquiry that fits the particular needs of this study. Instructional leadership practices and beliefs are multidimensional. “Qualitative methods are more sensitive and adaptable to the many mutually shaping influences and value patterns that may be encountered” (Lincoln & Guba, 1985, p. 40). Creswell refers to qualitative research as providing “a complex, holistic picture” (p. 15).

Bogdan and Biklen (1992) describe qualitative research as having the following characteristics:

- the source of data is a natural setting;
- the researcher is the key instrument of data collection;
- oriented to process rather than product;
- descriptive; and
- inductive.

This study used a qualitative, descriptive multi-case study approach because the research incorporated both a particular “phenomenon,” i.e., curricular implementation in the Bozeman Public Schools, and the “context,” i.e., site-specific instructional leadership practices and beliefs at each elementary school within the Bozeman Public Schools, within which the phenomenon was occurring (Yin, 1993, p. 31).

Five Axioms of Naturalistic Inquiry

Lincoln and Guba (1985) posit five axioms as guiding principles for naturalistic inquiry. Each axiom is discussed as it relates to this study.

1. "There are multiple constructed realities that can be studied only holistically" (p. 37). This study investigated the instructional leadership practices and beliefs of six principals in six different schools. Perceptions of principals and teachers are often varied. Leadership practices and beliefs are based on various components of a school community and the individuals who practice in that school. Thus, teachers and principals participated in this study.
2. "The inquirer and the object of inquiry interact to influence one another; knower and known are inseparable" (p. 37). The researcher was the primary data-gathering instrument, and values and biases are inherent in a human instrument. Personal information about the researcher is provided for the reader so the reader may judge inherent biases.
3. "The aim of inquiry is to develop an idiographic body of knowledge in the form of 'working hypotheses' that describe the individual case" (p. 38). This study examined the relationship of specific instructional leadership practices and beliefs to student spelling achievement. Such inductively derived hypotheses or theories, i.e., generalizations based on observed relationships, allow for subsequent analysis in the positivist paradigm.
4. "All entities are in a state of mutual simultaneous shaping so that it is impossible to distinguish causes from effects" (p. 38). Varied interactions of elements in a

school lead to other interactions which may or may not produce specific outcomes in all schools.

5. "Inquiry is value-bound" (p. 38). Naturalistic inquiry is influenced by the researcher. The researcher's values are expressed in the choice of research problem and the perceptions used to frame questions, design the study, and collect and analyze data.

Issues of Research Design and Data Reporting

In naturalistic inquiry, trustworthiness is established by affirming the study was carried out in a consistent and reliable manner. Lincoln and Guba (1985) proffer four criteria for trustworthiness: credibility; transferability; dependability; and confirmability.

Credibility is dependent on three elements: (1) rigorous techniques and methods; (2) researcher credibility; and (3) philosophical belief in naturalistic inquiry (Patton, 1990, p. 461). Lincoln and Guba (1985) suggest five major techniques used to establish credibility: activities including prolonged engagement, persistent observation, and triangulation to make credible findings more likely to occur; peer debriefing in order to provide an external check on the inquiry process; negative case analysis to refine working hypotheses as information is gathered; referential adequacy, i.e., checking interpretations against archived raw data; and member checking, in order to ensure the constructors of the multiple realities have been found and interpreted correctly (p. 301). Goetz and LeCompte (1984) assert high internal validity exists in the naturalistic data collection process:

The methods of collection and analysis that are used, the length of time involved in data collection, and the constant self-monitoring of the researcher all contribute to the certainty that observed results, when triangulated with other data, can be attributed to the treatment. (p. 221)

In the naturalistic paradigm, the researcher provides data so the reader may make transferability judgments based on the specific context of the study (Lincoln and Guba, 1985, p. 316). McMillan and Schumacher (1989) refer to this as external validity.

Transferability is enhanced by purposeful sampling and thick, rich description.

Dependability and confirmability are similar to reliability and objectivity in the traditional paradigm. Lincoln and Guba (1985, pp. 319-320) cite Halpern's audit trail categories, which include raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes, personal notes, and instrument development information as techniques which support dependability and confirmability.

Grounded Theory

Glaser and Strauss (1967) developed grounded theory in 1967. The basic tenet of this approach is that a theory must emerge from the data, i.e., a theory must be grounded in the data. Thus, the approach is inductive rather than deductive. According to Strauss and Corbin (1990), "the grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon" (p. 24).

Grounded theory inquiry is portrayed as a problem-solving endeavor concerned with understanding action from the perspective of the human agent (Haig, 1995). The

methodology combines theory and data. The research questions are open and general rather than formed as specific hypotheses, and the emergent theory accounts for a phenomenon that is relevant to participants.

Inquiry begins by focusing on an area of study. Data are gathered from a variety of sources, including interviews and field observations. Once gathered, the data are analyzed through the use of a variety of coding and theoretical sampling procedures. When this is done, theories are generated, with the help of interpretive procedures, before being presented. According to Glaser and Strauss (1967), this latter activity is a crucial part of the research process. Stake (1995) writes, "For the most part the cases of interest in education and social services are people and programs. Each one is similar to other persons and programs in many ways and unique in many ways. We are interested in them for their uniqueness and commonality" (p. 1).

Grounded theory is regarded by Glaser and Strauss (1967) as a general theory of scientific method concerned with the generation, elaboration, and validation of social science theory. For them, grounded theory research should meet the requirement for robust science, i.e., consistency, reproducibility, generalizability, etc., although not in the traditional positivist sense. A good grounded theory is one that is: (1) inductively derived from data, (2) subjected to theoretical elaboration, and (3) judged adequate to its domain with respect to a number of evaluative criteria (Haig, 1995).

Although a literature review is completed, theory emerges directly from the data and remains "grounded in" the data. In grounded theory, data collection and analysis are combined, and initial data analysis is interlaced with continuing data collection. Data

analysis consists of coding. Miles and Huberman (1994) said that “coding is analysis” (p. 56) and leads to dissecting the data and “lumping and clumping” (p. 56) of relevant categories, relationships, and processes for later analysis and data display.

Open coding of the data refers to looking for patterns in the data. The data are divided into concepts and categories of concepts. In axial coding, the categories uncovered in open coding are connected (Strauss & Corbin, 1990). Coding processes concern matching “conditions, context, action/interactional strategies and consequences” (Strauss & Corbin, p. 96). Selective coding is the process of selecting the core categories identified in the analysis and then relating it in a systematic way to the other categories uncovered in the research.

In this way, data are compared continuously with other data, i.e., constant comparison method, to detect emerging categories and themes and to direct the data collection process. Thus, the researcher is able to increase insights and clarify the parameters of the emerging theory. After the selective grouping of categories take place, the theory grounded by comparison against the data emerges.

Summary

The National Commission on Teaching and America’s Future (1996), in its report entitled, What Matters Most: Teaching for America’s Future, recommends “increasing teachers’ knowledge to meet the demands they face” and “recognizing and using teachers’ expertise in schools that are redesigned to support high-quality teaching and learning” (p. 5). The principal, as the instructional leader of the school, is key in any

effort to improve professional practice (Glickman et al., 1995).

A review of the literature has provided an overview of the avenues for staff development and the status of instructional leadership as the impetus for professional development efforts and student outcomes. Staff development and instructional leadership were conceptualized in terms of definitions and practices. Four main themes of principal instructional leadership practices and beliefs emerged: (1) the principal as resource provider; (2) the principal as instructional leader; (3) the principal as communicator; and (4) the principal as visible presence. The research that informs best practices in staff development and instructional leadership were presented. Antecedent effects related to the principal were described. Contextual factors, i.e., school size and school SES, were explained. Relationships to student achievement were described.

Researchers tend to agree that formal student achievement test outcomes are but one measure of the impact of instructional leadership. Schools are complex systems and despite a huge number of indirect effects, scholars must rely on accessible, but relatively narrow data sources to access achievement outcomes. This review of literature provides a theoretical framework for the study. The framework is based on the belief that principal practices, staff development, and specific contextual factors in a school influence student achievement.

According to Strauss and Corbin (1990), there are four main requirements for judging a good grounded theory:

- It should fit the phenomenon, provided it has been carefully derived from diverse data and is adherent to the common reality of the area;

- It should provide understanding, and be understandable;
- Because the data are comprehensive, it should provide generality, in that the theory includes extensive variation and is abstract enough to be applicable to a wide variety of contexts; and
- It should provide control, in the sense of stating the conditions under which the theory applies and describing a reasonable basis for action. Information on the constructivist paradigm and on grounded theory was provided in detail.

In Chapter 3, research methodologies are presented. Details of research design, setting and participants, data collection and analysis are explained.

CHAPTER 3

METHODOLOGY

The purpose of this study was to explore the relationship between the instructional leadership practices and beliefs of elementary school principals in the Bozeman Public Schools and student achievement in spelling as reflected in scores on national normed tests. The study was carried out during a three month period from October 2001, through December 2001. During this time specific instructional leadership practices and beliefs of the six elementary school principals in the District were examined to develop theories about the relationship of instructional leadership and student achievement and improved scoring patterns in spelling. The research questions were:

- What specific principal attributes and instructional leadership practices and beliefs are related to the effectiveness of Process Spelling as inferred from spelling achievement scores?
 - What instructional leadership practices and beliefs of principals related to Process Spelling are practiced at elementary schools in Bozeman?
 - Do relationships exist between the implementation of the Process Spelling curriculum in grades 1 through 3 in the Bozeman Public Schools and increases in CTBS spelling scores and TWS-3 scores?

The need to explore the research questions from the perspectives of principals and teachers determined the choice of a qualitative research design. There are 12 sections in this chapter: Design of the Study; Setting; Description of Research Participants; Methods and Periods of Data Collection; Data Management; Analysis of Data; Development of a Grounded Theory; Role and Experience of the Researcher; Issues of Research Design and Data Reporting; Ethical Considerations; Assumptions, Limitations and Delimitations; and a Summary.

Design of the Study

It was the intent of this study to determine *which* instructional leadership practices and beliefs were occurring at each particular school and *how* these practices related to student achievement in spelling. According to Yin (1993, p. 45), a good research design causes the researcher to:

1. Articulate the objectives and questions of the study and show how the method used bears on these objectives or questions;
2. Link the objectives and questions to the basic unit of study;
3. Identify the critical evidence, i.e., interviews, surveys, document analysis; and
4. Stipulate the techniques for analyzing the evidence, so that the questions of initial interest are addressed in a critical manner.

A grounded theory study generates “an abstract analytical schema of a phenomenon that relates to a particular situation” (Creswell, 1998, p. 56). This qualitative study provides detailed profiles of instructional leadership circumstances at each school

in order to connect data to theory. The researcher developed instructional leadership profiles for each of the six elementary schools in a single district which implemented a Process Spelling curriculum. The researcher collected interview, survey, and achievement score data, and subsequently inter-related these categories of information to propose a theory related to the importance of specific leadership practices and beliefs in relationship to student spelling achievement at the six elementary schools. According to Strauss and Corbin (as cited in Creswell, 1998), a theory is a plausible relationship among concepts and sets of concepts. The theories developed in this study may subsequently be tested through a quantitative or positivist paradigm.

Setting

The school district studied was selected for the following reasons:

1. The interest of school district personnel in the effect of instructional leadership on student performance;
2. The availability of reliable standardized spelling achievement test scores; and
3. Cooperation of administrators and teachers, which was necessary to conduct this study.

The study took place in the Bozeman Public Schools, a joint elementary and secondary district located in Bozeman, a town of approximately 27,000 citizens located in Gallatin County, Montana (Gallatin Development Corporation, 2001). Gallatin County's population currently numbers approximately 63,000 citizens and has experienced steady population growth for several decades (Gallatin Development Corporation, 2001).

Growth in the city of Bozeman has slowed in the past decade, and recent growth is occurring in areas on the outskirts of Bozeman. According to the Gallatin Development Corporation (2001), the local, non-profit economic development corporation for Gallatin County, over 90% of the population of Gallatin County lives either in Bozeman or within a 30-minute drive of Bozeman. Over 72% of the Bozeman population has some postsecondary education, and over 42% of the Bozeman population has college degrees.

The economy in Bozeman and Gallatin County is diverse (Gallatin Development Corporation, 2001). Over 3,400 businesses employ over 41,000 people. The largest single employer in the area is Montana State University, with over 2,000 full- and part-time employees (Montana State University, 2001a). This land grant university is one of two university systems in Montana. Its student population of 11,700 (Montana State University, 2001b) also significantly impacts the economy.

According to the Gallatin Development Corporation (2001), retail trade employees comprise 26% of the labor force, government employees make up 20%, and service industries comprise 25% of the labor force. Nearly 10% of the labor force is based on manufacturing. Agriculture is also an important part of the Gallatin County economy, with over 800 farms. In 1996, agriculture in the County generated over \$65 million from livestock and crops.

There are more than 20 local school districts in Gallatin County with over 8,760 students enrolled (Gallatin Development Corporation, 2001). The Bozeman Public Schools serve 55.6% of the County's student population. The school district has a total enrollment of approximately 5,100 elementary and secondary students and is comprised

of six elementary schools, kindergarten through grade 5, two middle schools, grades 6 through 8, and one high school (Gallatin Development Corporation, 2001).

The Bozeman Public Schools employ approximately 600 full-time and part-time staff members, i.e., certified and classified personnel (Bozeman Public Schools, 2001c). The elementary district has a total enrollment of approximately 2,150 students. Two of the schools opened in 1992. The other four schools have been in operation for many years (Bozeman Public Schools, 2001d).

The average class size is about 23 students. Students in the elementary classrooms are heterogeneously grouped according to gender and ability levels. Teachers are supported by a variety of classroom assistants. All elementary buildings have centralized libraries. The district employs librarians and aides to staff the K-5 libraries. Music and Health Enhancement (physical education and health) are taught by specialists (Bozeman Public Schools, 2001d).

Four of the elementary schools are organized into traditional single-age classrooms. Two of the elementary schools include a combination of single-age and multi-age classes. Test data show that the Bozeman elementary students generally achieve well above the national average on standardized achievement tests (Bozeman Public Schools, 2001d).

Description of Research Participants

Participants in this study were 36 classroom teachers in grades 1 through 3 and the six associated elementary principals. Five principals had worked at their current

schools for more than three years. One school had several principal turnovers in the past three years.

To conduct this research, the Assistant Superintendent of the Bozeman Public Schools was consulted for approval and input in April 2001 (Appendix B). The Assistant Superintendent encouraged principal participation in the study at District Instructional Cabinet meetings in April 2001 and May 2001. In addition to their own participation, elementary school principals were asked by this researcher and by the Assistant Superintendent for their participation in encouraging teachers in their buildings to take part in the study.

All first, second, and third grade teachers during the 1998-99, 1999-00, and 2000-01 school years were invited to participate in the research. In May 2001, a letter describing the research study and a preliminary demographic questionnaire was sent to teachers (Appendix C). Included with the letter was an authorization form for participation in the study (Appendix D).

In August 2001, the Assistant Superintendent was consulted for approval to conduct instructional leadership self-assessments and structured interviews with elementary principals in the District and to conduct additional surveys with elementary teachers. A verbal commitment was secured through the Assistant Superintendent for District support. The researcher and Assistant Superintendent discussed the research during September and October, 2001 District Instructional Cabinet meetings so that principal self-assessments and interviews and teacher surveys could be conducted during October and November, 2001.

Methods and Periods of Data Collection

The design of this study was a multi-site case study, describing the influence of principal instructional leadership activities on a curricular implementation. There was no manipulation of variables. All data collection occurred during the months of October and November, 2001.

According to Yin (1989, p. 79), "Any finding or conclusion in a case study is likely to be much more convincing and accurate if it is based on several different sources of information." Several data modalities were triangulated for this study: personal principal interviews; assessment data; teacher surveys and principal self-assessments; and in-service attendance records.

The qualitative data consisted of interview and self-assessment information from principals and survey information from teachers. Teacher information regarding instructional leadership practices and beliefs at specific schools was collected through the use of a paper and pencil survey. Principal information was collected through a leadership practices and beliefs self-assessment and structured interviews.

Quantitative data consisted of test score data for the CTBS (Bozeman Public Schools, 2001a) and the TWS-3 (Bozeman Public Schools, 2001b), as well as self-assessment and survey information. Test score data and teacher in-service attendance records were provided to the researcher by the Curriculum Director of the Bozeman Public Schools.

Instructional Leadership Assessment

As part of the interview protocol (Appendix E), this researcher developed survey instruments to collect information regarding teacher and principal perceptions of instructional leadership practices and beliefs at each school site. Two parallel forms of the instrument were developed to reflect the differing perspectives of each group: a self-assessment form completed by the principal (Appendix F) and a teacher form (Appendix G). Studies (Hallinger & Murphy, 1985; Krug, 1986) have found significant differences in perceptions across role groups.

Theoretical Framework of Survey Instrument

The survey instruments assess the four main areas of instructional leadership described by Smith and Andrews (1989), i.e., the principal as resource provider, the principal as instructional resource, the principal as communicator, and the principal as visible presence. These dimensions were further delineated by the researcher into specific instructional leadership behaviors and beliefs related to the implementation of Process Spelling. Sources for the survey content were the Principal's Instructional Management Rating Scale (Hallinger & Murphy, 1985), which is noted to be the most commonly used instrument in studies that employ an instructional leadership perspective (Hallinger, 2001), the staff survey of The Leadership and Management of Schools (Leithwood & Jantzi, 1997), research on instructional leadership characteristics of principals (Smith & Andrews, 1989), and specific principal practices of interest to the Director of Curriculum and the Assistant Superintendent of the Bozeman Public Schools. The philosophy that

staff development is a process occurring over time with several components (Asayesh, 1993) also guided the synthesis of the instrument, in that specific principal activities related to Process Spelling were itemized in the instrument. Specific instructional leadership beliefs are discussed as part of the school profiles in Chapter 4. Figure 3 provides a summary of the instrument's instructional leadership behaviors as categorized by the Andrews and Smith (1989) schema:

Figure 3. Instructional Leadership Assessment Summary of Behaviors.

Visibility

1. Conducts informal observations in classrooms, during the instruction of any subject, on a regular basis (informal observations are unscheduled, last at least five minutes, and may or may not involve written feedback or a formal conference)
2. Actively participates in staff development activities related to Process Spelling

Resource Provider

1. Sets clear expectations to staff regarding Process Spelling instruction
2. Uses the teacher-leader concept at the school site for Process Spelling
3. Encourages ongoing teacher collaboration regarding instruction in all areas
4. Encourages and provides for action research

Instructional Resource

1. Knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers on a regular basis through the use of copies of journal articles, books, memos, or discussions
2. Sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities
3. Includes Process Spelling instruction as part of the formal evaluation process
4. Uses Test of Written Spelling results to assess the school's progress in spelling

Communicator

1. Conveys high expectations for teacher and student performance
2. Discusses Process Spelling with teachers at faculty meetings
3. Acknowledges or compliments teachers for their efforts or performance with regards to spelling instruction
4. Actively involves teachers in decision making

For each item on the self-assessment instrument, the principals indicated the frequency with which they enacted a behavior associated with that particular instructional leadership function. The item was rated on a four-point Likert-type scale ranging from at least one time a month to one time per year or less. Principal perceptions regarding Process Spelling and their leadership style were also included. Principals rated belief statements on a four-point Likert-type scale ranging from strongly disagree to strongly

agree. The individual self-assessments were compared to the teacher perception surveys collected at each school site.

Pilot Tests

In order to verify that the content and sequence of the principal instructional leadership self-assessment and principal interview questions were understandable and logical, the survey protocol was pilot tested with three elementary principals not included in this study who had participated in some type of curriculum implementation, although not specific to Process Spelling. Due to geographic limitations, the pilot study was conducted via telephone. The pilot subjects were asked to indicate if they were confused or had questions regarding the information being solicited. Based on this pilot study, the following adjustments were made to the principal self-assessment:

1. demographic information was added; and
2. two open-ended questions regarding instructional leadership attributes of principals were added to the survey.

In addition, an open-ended question soliciting comments regarding the researcher's principal instructional leadership variables influencing student achievement was included as part of the series of interview questions.

A similar pilot test for the teacher survey was conducted with three elementary teachers not included in this study who had recently been involved in curriculum implementation in their classrooms. This pilot study was also conducted via telephone.

The following adjustments were made:

1. the addition of a question soliciting additional comments from teachers; and
2. the addition of instructions specifying to check boxes only. This adjustment was also reflected in the principal self-assessment.

Principal Interview Process

The principal interview process consisted of a series of steps. Each principal:

1. was contacted by the researcher;
2. received additional information about the study upon request;
3. was solicited for a commitment to participate in the study;
4. coordinated with the researcher for a scheduled interview. This researcher believes her professional acquaintance with each principal and the support of the Assistant Superintendent provided a degree of credibility and the establishment of rapport with the interviewees that helped to facilitate open, honest participation.
5. completed the instructional leadership self-assessment;
6. participated in interviews; and
7. cooperated in data verification efforts by the researcher.

An interview protocol (Appendix E) was developed by the researcher to guide the data collection process. The principal self-assessments occurred during an October 2001 District Instructional Cabinet meeting, and the interviews were conducted during the months of October and November at the convenience of each elementary principal, in private, with only the researcher and the individual principal as participants. Two interviews took place at the school site, two interviews took place at local restaurants, one

interview took place over the telephone, and one interview took place at the school in which the former principal was presently a teacher. Interviews were partially structured. Krathwohl (1998) describes the partially structured interview as having pre-formulated questions but no pre-determined order for those questions. The researcher added or modified questions as deemed appropriate as the interviews progressed. Questions were open-ended.

The interview protocol provided opportunities to collect data regarding instructional leadership beliefs and practices of each principal. The self-assessment was based on the four dimensions of instructional leadership, i.e., instructional leader, resource provider, communicator, and visible presence (Smith & Andrews, 1989), although the distinctions may not have been apparent to the participants. The partially structured interview protocol encouraged the principals to share their day-to-day leadership experiences regarding Process Spelling implementation as opposed to simply theoretical beliefs about their professional roles as instructional leaders. During the interview and in follow-up member checking, participants were encouraged to expand upon statements and to share examples, anecdotes, and other information which they considered important to the implementation of Process Spelling at their schools.

Interview responses were recorded in shorthand. In addition, the researcher noted the context of each interview. Immediately following each interview, the researcher transcribed the interview so that a written record was able to be provided to the principal for member checking purposes. Principals returned the transcripts to the researcher with

additions, corrections, and clarifications. The researcher's notes and transcripts provided an audit trail for the research.

Teacher Survey Process

Elementary teachers in grades 1 through 3 were surveyed twice during the study. In May 2001, teachers were notified of the study and asked for their participation. At that time, demographic and in-service data regarding Process Spelling was gathered (Appendix C). A consent form was also distributed (Appendix D). Forty-one out of 59 teachers responded.

Instructional leadership assessment surveys were sent to teachers in October 2001. Teachers who did not respond to the May 2001 request for participation were re-contacted. Two additional teachers chose to participate. Overall, 36 teachers participated in the final survey.

In large part, the survey questions constructed around the four areas of instructional leadership described by Smith and Andrews (1989) were designed to gauge teacher perceptions of these principal practices. Part of the survey was designed to parallel the principal self-assessment instrument. In addition to the Likert-scale ratings, the survey provided space for teachers to comment on instructional leadership.

Participant Observer Journal

The researcher kept a brief log to record and summarize fieldwork. The log also contained the research schedule, interview summaries, and additional impressionistic views by the researcher.

Data Management

Interview and Survey Information

Information from the principal interviews and teacher open-ended survey questions were compared to determine similarities and differences of stakeholder perceptions with regard to instructional leadership at each school. Upon completion of the partially structured interviews and subsequent member checks, information from each interview was entered into a word processing program in the form of lists. The researcher used open coding to form initial categories of information. These lists were re-sorted by themes for each school and principal. A list of primary themes and most often mentioned practices was compiled and shared with participants for their verification after the initial analysis was completed. As the research progressed, emerging themes and sub- themes were identified, clarified, and refined with subsequent interviews.

Survey Data Treatment

Information regarding instructional leadership practices and beliefs was obtained from teachers and principals at each study school by means of a paper and pencil survey instrument. Survey questions were structured to assess either the relative frequency of instructional leadership activities or strength of opinion regarding perceptions of instructional leadership practices and beliefs. Each question was coded by means of a four-point Likert-type scale with low frequency and low strength of opinion responses associated with high ordinal values. School specific survey results were calculated as a simple average of the collective ordinal values for each question in the seven survey

subsections (Tables 56-62, pages 194-200). For simplicity, the results of the averaged ordinals were ranked from one to six across the six study schools, with a rank of one corresponding to the individual school with the highest relative frequency of instructional leadership activities or strength of opinion regarding perceptions of instructional leadership practices and beliefs with respect to the specific survey subsection (Table 63, p. 205). An overall survey ranking was obtained for each school by averaging the ranks for each of the seven survey subsections. The survey results are summarized in Chapter 4.

Analysis of Data

Normality of Test Score Data

A modified Kolmogorov-Smirnov test (Lilliefors significance correction) was conducted to evaluate the normality of TWS-3 raw test score (Bozeman Public Schools, 2001b) distributions and CTBS national percentile test score (Bozeman Public Schools, 2001a) distributions (Table 3). The level of significance for all statistical tests was .05. SPSS (Green, Salkind, & Akey, 2000) was used for all statistical tests.

Table 3. Goodness of Fit Testing.

Test	School	Grade	Test Period	Kolmogorov-Smirnov		
				Statistic	df	Sig.
TWS-3	1	1	Fall	.120	226	.000
TWS-3	1	1	Spring	.062	225	.033
TWS-3	1	2	Fall	.066	236	.014
TWS-3	1	2	Spring	.065	239	.017
TWS-3	1	3	Fall	.045	243	.200

Test	School	Grade	Test Period	Kolmogrov-Smirnov		
				Statistic	df	Sig.
TWS-3	1	3	Spring	.071	248	.004
TWS-3	2	1	Fall	.183	136	.000
TWS-3	2	1	Spring	.067	132	.200
TWS-3	2	2	Fall	.114	135	.000
TWS-3	2	2	Spring	.078	143	.032
TWS-3	2	3	Fall	.116	132	.000
TWS-3	2	3	Spring	.084	128	.027
TWS-3	3	1	Fall	.213	141	.000
TWS-3	3	1	Spring	.057	133	.200
TWS-3	3	2	Fall	.086	148	.009
TWS-3	3	2	Spring	.063	142	.200
TWS-3	3	3	Fall	.056	144	.200
TWS-3	3	3	Spring	.065	149	.200
TWS-3	4	1	Fall	.145	121	.000
TWS-3	4	1	Spring	.086	119	.030
TWS-3	4	2	Fall	.124	127	.000
TWS-3	4	2	Spring	.096	121	.008
TWS-3	4	3	Fall	.079	119	.065
TWS-3	4	3	Spring	.079	121	.064
TWS-3	5	1	Fall	.175	255	.000
TWS-3	5	1	Spring	.056	257	.049
TWS-3	5	2	Fall	.078	256	.001
TWS-3	5	2	Spring	.069	257	.005
TWS-3	5	3	Fall	.102	239	.000
TWS-3	5	3	Spring	.051	239	.200
TWS-3	6	1	Fall	.180	87	.000
TWS-3	6	1	Spring	.052	93	.200
TWS-3	6	2	Fall	.099	116	.008
TWS-3	6	2	Spring	.083	125	.035
TWS-3	6	3	Fall	.065	133	.200
TWS-3	6	3	Spring	.074	127	.089
CTBS	1	3	n/a	.110	399	.000
CTBS	2	3	n/a	.106	217	.000
CTBS	3	3	n/a	.135	238	.000
CTBS	4	3	n/a	.112	216	.000
CTBS	5	3	n/a	.134	362	.000
CTBS	6	3	n/a	.136	230	.000

Note. Bold numbers indicate the lower bound of the true significance.

In addition, histograms, normal probability plots, and detrended normal probability plots were constructed to graphically assess normality. The combined results indicate that the majority of TWS-3 and CTBS score distributions deviate from normality. Fall grade 1 TWS-3 distributions were positively skewed; fall grade 2 and grade 3 TWS-3 distributions were positively skewed or near-normal; and spring TWS-3 distributions were near normal. The CTBS distributions were negatively skewed or bimodal. Based on the nonnormality of the test score distributions, the nonparametric Kruskal-Wallis and Mann-Whitney U tests were employed to statistically compare median test scores among the grade level distributions.

For each significant Kruskal-Wallis test, an effect size statistic, eta square, was calculated using the formula:

$$\eta^2 = (\chi^2) / (N-1)$$

The results of the nonparametric statistical tests are described in Chapter 4.

Test Score Treatment

TWS-3 raw test scores were converted to standard scores based on a conversion table provided in the TWS-3 Manual (Larsen & Hammill, 1994). TWS-3 standard scores for each school year and school were subsequently combined into overall grade level distributions (Table 4) and a Kruskal-Wallis test was conducted to evaluate potential grade level differences in median standard test scores.

Table 4. TWS-3 Standard Test Scores.

TWS-3 Standard Score Data Descriptive Statistics

Grade	Test Period	N	Mean	SD
1	fall	966	77.29	10.81
2	fall	1018	91.76	13.35
3	fall	1010	96.57	15.84
1	spring	959	102.26	14.75
2	spring	1027	104.06	16.48
3	spring	1012	107.32	17.51

For the fall testing period, the Kruskal-Wallis test was significant, $\chi^2(2, N = 2994) = 898.33, p = .000$. The eta square index of .300 indicates a large effect size.

Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of grade levels. The results of the fall testing period follow-up tests are reported in Table 5.

Table 5. TWS-3 Standard Score Data Significant Follow-up Tests.

TWS-3 Standard Score Data Significant Follow-up Tests

Test Period	Grade Level Comparison	Z	Sig.
fall	grade 1, grade 2	-24.10	.000
fall	grade 1, grade 3	-27.02	.000
fall	grade 2, grade 3	-7.26	.000
spring	grade 1, grade 2	-2.04	.041
spring	grade 1, grade 3	-6.68	.000
spring	grade 2, grade 3	-4.52	.000

The grade 3 median test score was greater and significantly different than both the grade 2 and grade 1 median test scores. The grade 2 median test score was greater and significantly different than the grade 1 median test score. For the spring testing period,

the Kruskal-Wallis test was significant, $\chi^2(2, N = 2998) = 46.04, p = .000$. The eta square index of .015 indicates a small effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of grade levels. The results of the spring testing period follow-up tests are reported in Table 5. The grade 3 median test score was greater and significantly different than both the grade 2 and grade 1 median test scores. The grade 2 median test score was greater and significantly different than the grade 1 median test score.

Because of the statistically significant differences between grade level TWS-3 standard scores, with a systematic increase in median standard score with grade level, a bias would be generated in the determination of any combined-grades standard test score median in cases where discrepancies existed between the number of students at each grade level. Such large grade level population differences are apparent in the six study schools (Table 6).

Table 6. Grade Level Student Populations.

Grade	School Year	Test Period	School 1	School 2	School 3	School 4	School 5	School 6
1	98-99	fall	69	48	48	44	72	18
2	98-99	fall	82	44	56	50	69	39
3	98-99	fall	87	44	56	27	76	53
1	98-99	spring	68	46	41	42	72	20
2	98-99	spring	77	47	49	44	68	40
3	98-99	spring	87	46	56	27	75	52
1	99-00	fall	78	44	46	34	100	42
2	99-00	fall	71	43	40	41	78	38
3	99-00	fall	78	44	42	49	79	40
1	99-00	spring	78	43	51	34	105	44
2	99-00	spring	79	48	45	44	80	41

Grade	School Year	Test Period	School 1	School 2	School 3	School 4	School 5	School 6
3	99-00	spring	85	40	45	51	80	42
1	00-01	fall	79	44	47	43	83	27
2	00-01	fall	83	48	52	36	109	39
3	00-01	fall	78	44	46	43	84	40
1	00-01	spring	79	43	41	43	80	29
2	00-01	spring	83	48	48	33	109	44
3	00-01	spring	76	42	48	43	84	33

In addition, conversion of the raw test scores into Z-scores was found to be inappropriate (Pro-ed Test Company, personal communication, July 17, 2001). As a consequence of the unbalanced grade level population ratios and the statistically significant differences between grade level TWS-3 standard score medians, the TWS-3 standard scores were replaced with the original raw test scores for all subsequent analyses. In place of a school year average test score for each school based on combining and averaging the standard scores for grades 1-3, a pooled test score average was calculated by averaging the raw test scores for each grade level and combining these results into an overall school average (Table 7). Although not suitable for inferential statistical analyses, pooled test score averages were assembled to create school level measures of TWS-3 performance, i.e., test score achievement and improvement ranking comparisons, upon which the subsequent grounded theory was built in Chapters 4 and 5.

Table 7. TWS-3 Raw Score Pooled Means for Grades 1-3.

School Year	Test Period	School 1	School 2	School 3	School 4	School 5	School 6
1998-99	Fall	18.21	15.92	16.59	16.22	17.97	16.64
1999-00	Fall	20.24	18.07	18.61	20.28	20.18	18.42
2000-01	Fall	20.19	18.02	19.65	19.46	20.19	18.75
1998-99	Spring	32.10	31.71	31.98	29.87	34.19	28.46
1999-00	Spring	36.20	31.52	33.52	32.72	38.31	34.65
2000-01	Spring	34.22	33.92	33.14	31.55	38.36	32.22

The use of the raw score averaging technique precluded subsequent statistical tests of TWS-3 raw score medians when examining school level test score patterns; however, inter-year statistical tests were conducted for each school at each specific grade level. National percentile CTBS scores for grade 3 were used in all analyses.

TWS-3 and CTBS scores were examined at the school level by comparing plots of test score averages across the three-year period of the study, and by developing relative rankings for test score achievement and test score improvement. TWS-3 raw test score achievement rankings were determined by averaging the three school years of pooled grade level results for each school and ranking these averages from one to six across the six study schools, with a rank of one corresponding to the individual school with the highest average test score (Table 63). CTBS national percentile test score achievement rankings were determined by averaging the three school years of grade 3 test data for each school and ranking these averages from one to six across the six study schools, with a rank of one corresponding to the individual school with the highest average test score (Table 63). An overall test score achievement ranking was obtained for each school by averaging the test score achievement ranks for fall TWS-3, spring TWS-3, and CTBS.

TWS-3 raw test score improvement rankings for the three-year period of the study were determined by subtracting the 1998-99 pooled grade level means from the 2000-01 pooled grade level means for each school and ranking these differences from one to six across the six study schools, with a rank of one corresponding to the individual school with the largest test score difference. CTBS national percentile test score improvement rankings for the three-year period of the study were determined by subtracting the 1998-99 grade 3 average from the 2000-01 grade 3 average for each school and ranking these differences from one to six across the six study schools, with a rank of one corresponding to the individual school with the largest test score difference. An overall test score improvement ranking was obtained for each school by averaging the test score improvement ranks for fall TWS-3, spring TWS-3, and CTBS. The rank order, e.g., rank 1 high, rank 6 low, does not imply outstanding or poor performance, but rather relative position within the school district.

Development of Grounded Theory

In grounded theory, detailed descriptions of the case and the setting are components of the analysis. Lincoln and Guba (1985, p. 332) assert that, "Data are the constructions offered by or in the sources; data analysis leads to a reconstruction of those constructions." Interview transcripts, principal self-assessment, and teacher survey data allowed the researcher to *reconstruct* instructional leadership profiles for each elementary school. According to Lincoln and Guba (1985, p. 333), "Data analysis is not a matter of data *reduction*, as is frequently claimed, but of *induction*." Thus, effective instructional

leadership practices and beliefs were determined based on each school's specific assessment data and profile information.

Role and Experience of the Researcher

The researcher is a 40-year old female doctoral student in educational administration at Montana State University-Bozeman. The researcher has been involved in the field of education for 10 years; six as a middle school teacher, two as an elementary principal, and two as a middle school assistant principal. Previous degrees include a Bachelor of Science degree in biology, a Master of Science degree in engineering, post-baccalaureate elementary and secondary teaching certification, and a Masters degree in educational leadership.

The researcher has been employed by the Bozeman Public Schools since August 1999. During the 1999-00 school year, the researcher worked as a 6th grade teacher in one of the district's middle schools. During the 2000-01 and 2000-2002 school years, the researcher served as a middle school assistant principal and elementary gifted and talented teacher and program coordinator. While the researcher does not know the majority of elementary teachers in the district, the researcher meets with the elementary principals bi-weekly during District Instructional Cabinet meetings. Through these meetings, the researcher comes into regular contact with the elementary principals of the district, but not to a degree that this researcher believes influenced the research or skewed the findings.

The researcher has had prior experience with collecting interpretive data including field notes recorded during teacher observations and survey collection and structured interviews with elementary teachers regarding the district's gifted and talented program. Transcription and analysis of data to identify patterns and emergent questions during this process was required.

Issues of Research Design and Data Reporting

Credibility, transferability, dependability, and validity are significant issues in the formulation of a naturalistic inquiry. Each of these criteria will be discussed as they relate to this study.

Credibility

In this study, credibility was established through triangulation, peer debriefing, and member checking. "The concept of triangulation by different methods can imply either different data collection modes or different designs" (Lincoln & Guba, 1985, p. 306). Multiple sources of data, i.e., test scores, survey data, structured interview data, and in-service attendance information provided opportunities to develop a complete instructional leadership profile for each school through a variety of methods. Cross referencing of data provided internal validity.

Peer debriefing is a technique whereby the researcher discusses the research process with an individual or individuals who have knowledge of qualitative methods and the subject matter in order to explore aspects of the study that "might otherwise remain

only implicit within the inquirer's mind" (Lincoln & Guba, 1985, p. 308). Dr. Boyd Dressler, the researcher's advisor, and Robert Gutzman, the Assistant Superintendent of the Bozeman Public Schools, acted as peer debriefers for questions and issues that arose during this study.

Member checking is a process in which participants are provided with copies of transcripts from interview sessions to review for accuracy. In this study, principals were provided opportunities to make changes in interview transcripts to assure clear representations of participant responses.

Transferability

In this study, all schools in the District were included, so sampling was not at issue. Transferability beyond the Bozeman Public Schools may be limited since the study was specific to a large and progressive school district in a large, rural state.

Dependability

An audit trail was established through field notes, survey responses, transcripts, teacher in-service attendance, and a research log. Internal reliability in this study was also preserved in that the researcher was the sole person conducting and transcribing the interviews and survey information. External reliability was supported by the inclusion of autobiographical information about the researcher. In this way, the reader may determine researcher biases that may have influenced the findings of the study. In addition, detailed descriptions of data collection and analysis procedures support external reliability.

Validity

Because a survey instrument was used to assess teacher and principal perceptions of instructional leadership behaviors, it was necessary to determine validity of this instrument. According to Gay and Airasian (1996), "Validity is the most important characteristic a test or measuring instrument can possess... When we test, we test for a purpose" (p. 161). The validity of the instructional leadership survey instrument this researcher developed was critical to ensure the survey measured what it intended to measure.

The surveys were examined for validity by Dr. Boyd Dressler (Montana State University - Bozeman) and Robert Gutzman (Assistant Superintendent of Curriculum and Instruction, Bozeman Public Schools). In addition, three elementary teachers reviewed the teacher survey, and two additional principals reviewed the principal self-assessment. The researcher made recommended changes in content and scope of the survey items.

Ethical Considerations

Respect and concern for participant dignity and welfare and researcher integrity are "the bottom lines of ethical research" (Gay & Airasian, 1996, p. 101). Teacher and principal participants were presented with an informed consent in April 2001 detailing the purpose of the study, the procedures used in conducting the research, the potential uses of the research, and respect for confidentiality. The researcher maintained confidentiality by refraining from naming individual schools. Schools were provided with number names. Teacher respondents remained confidential.

Assumptions

An underlying assumption on which this study was built was that principal activities listed in the Instructional Leadership Self-Assessment Instrument reflect a consensus of what is desired in instructional leadership of principals. In similar fashion, it was assumed the CTBS national percentile values and the TWS-3 scores are valid representations of student spelling achievement.

Additionally, it was assumed that classroom teachers have adequate first-hand knowledge and experience of principals' performance of job functions with respect to instructional leadership. Another assumption was that teachers' responses are accurate measures of specific practices demonstrated by principals.

Limitations and Delimitations

1. The research questions that specifically address instructional leadership behaviors were limited to teacher and principal survey participants.
2. The study was limited to principal instructional leadership practices and beliefs, and did not include teacher characteristics besides the amount of Process Spelling in-service and a broad measure of self-assessed efficacy.
3. For reasons of reliability, instructional leadership questions were limited to first through third grade teachers employed in the district during the 2000-01 school year. It is possible different results would have been found if a longitudinal design had been used with teacher participants from previous years.

4. The spelling assessments used in the study to represent student achievement in spelling, i.e., CTBS and TWS-3, may not fully reflect spelling achievement in the broadest sense.
5. This study was limited to SES ranking based on current free and reduced lunch counts. The SES ranking at one particular school may not be a true representation because of the transitory nature of the SES level; i.e., a large proportion of families at this school tended to be students at MSU-Bozeman, and family incomes were decreased while the parents were in school. In addition, in order to protect confidentiality, this school was not identified in the study.
6. This study was limited to formal in-service training in Process Spelling and site-based staff development activities related to Process Spelling. This study did not take previous professional development in spelling into account.
7. The research design was limited in its ability to control for the personality, maturity, and natural ability of each participant. Age, attitude, and experience may have influenced teacher responses.
8. This study was limited to specific principal demographic information, i.e., number of years as principal, number of years as principal of a specific school, number of years as classroom teacher.
9. Class sizes in the Bozeman Public Schools were consistent throughout schools at the primary grades, and have been consistent over the last several years. Per-pupil expenditure was not a factor because this study investigated a single district.

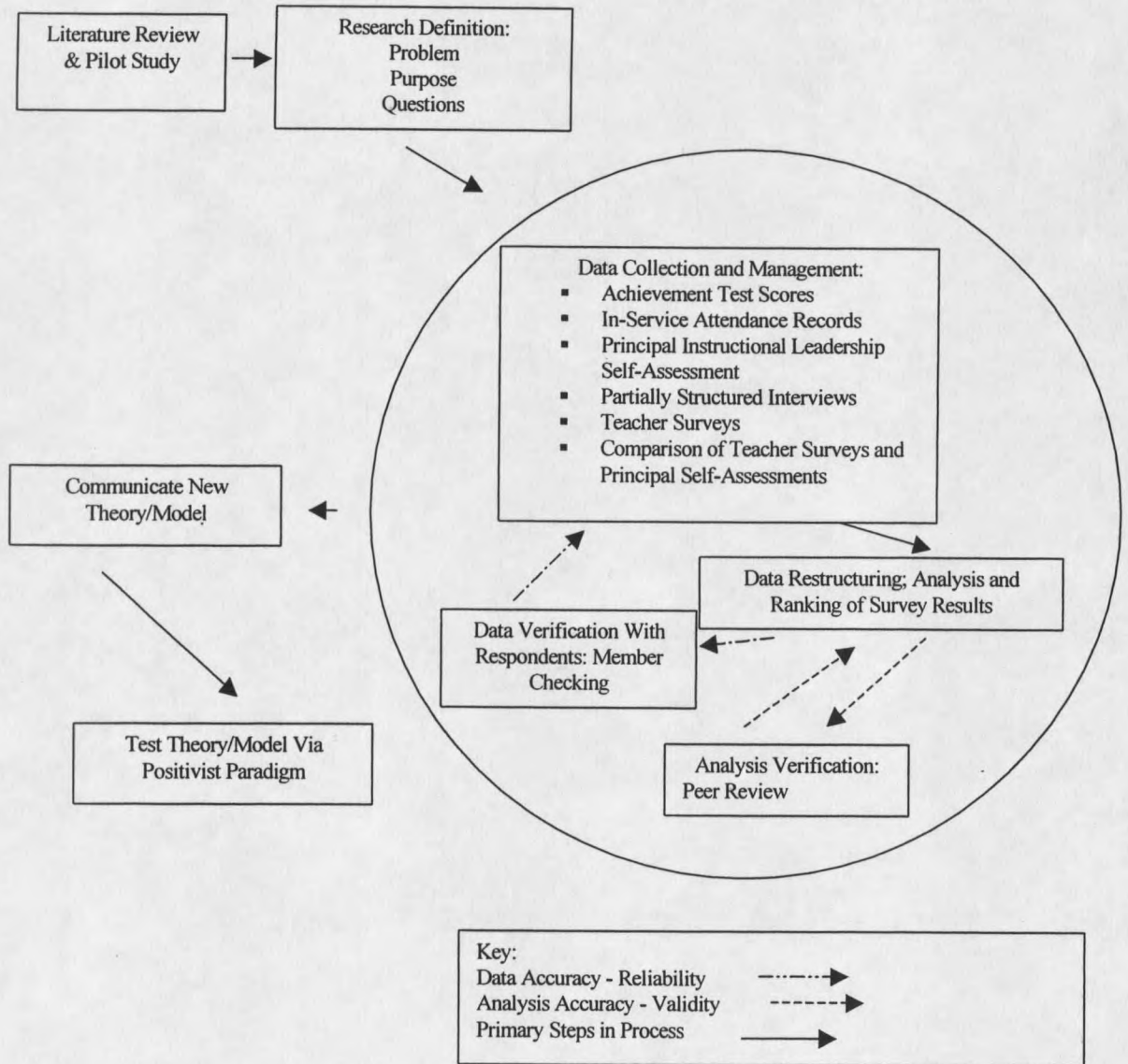
10. This study was delimited to three school contextual factors, SES, school climate, and school size. Because of the closely knit, relatively small community in which the Bozeman Public Schools operate, cultural influences of the community were not discussed in depth in this study.
11. The study was delimited to the participation of individuals who served as elementary principals in the Bozeman Public Schools during the 2000-01 school year.
12. Researchers have noted the relationship between the principal and school features and school environment are interactive, suggesting that principals use situational leadership by adapting their thinking and behavior to the school organization (Hallinger & Heck, 1996). The principal self-assessment and teacher surveys determined the presence or absence of certain specific instructional leadership behaviors.
13. This study was delimited to first, second, and third grade students attending the Bozeman Public Schools.
14. This study was delimited to available CTBS and TWS-3 data.

Summary

A multi-site grounded theory study was used to explore the relationship of instructional leadership practices and beliefs to pupil performance in spelling in grades 1 through 3 in the Bozeman Public Schools. The axioms of naturalistic inquiry as related to this study were provided.

Figure 4 provides a summary of the research design in the form of a model. The model is based on a conceptual model of qualitative research proposed by Borland and Howard (2001).

Figure 4. A conceptual model of the study.



Principals were administered an instructional leadership self-assessment and also participated in a partially-structured interview. First, second, and third grade teachers who were employed by the District during the 2000-01 school year were surveyed to determine teacher perceptions of instructional leadership at each school site. The survey instruments and the partially-structured interview questions were developed by the researcher and based on a literature review and interest of the Assistant Superintendent of the Bozeman Public Schools on whether and to what extent specific instructional leadership practices and beliefs were occurring in each school.

A review of the evidences of trustworthiness included an explanation of the researcher's role and experience. Ethical considerations were discussed, and assumptions, limitations, and delimitations were explained.

In this chapter, the methodologies used in the study have been discussed in detail. In the next chapter, the findings generated from the implementation of these methodologies will be presented. Descriptive statistics will be examined. Profiles of the instructional leadership occurring at each school will be presented. Findings will be discussed in relation to the study objectives.

CHAPTER 4

RESULTS

The results of a study of the relationship between the instructional leadership practices and beliefs of elementary school principals in the Bozeman Public Schools during a curricular innovation and student achievement in spelling as reflected in standardized test scores are presented in this chapter. The specific questions addressed are:

- What specific principal attributes and instructional leadership practices and beliefs are related to the effectiveness of Process Spelling as inferred from spelling achievement scores?
 - What instructional leadership practices and beliefs of principals related to Process Spelling are practiced at elementary schools in Bozeman?
 - Do relationships exist between the implementation of the Process Spelling curriculum in grades 1 through 3 in the Bozeman Public Schools and increases in CTBS spelling scores and TWS-3 scores?

Instructional leadership practices and beliefs related to Process Spelling are provided in individual school profiles based on principal interviews, school and district documentation, and teacher and principal perceptions as indicated by survey responses. The determination of whether relationships exist between the implementation of the

Process Spelling curriculum in grades 1 through 3 in the Bozeman Public Schools and subsequent increases in CTBS spelling scores and TWS-3 scores are described. The relationship between principal attributes and instructional leadership practices and beliefs and the effectiveness of Process Spelling as inferred from spelling achievement scores are addressed.

Data for school context variables, i.e., enrollment, free and reduced lunch percentages, and student demographics, were obtained from the Bozeman Public Schools central office. Data for principal personal experience attributes were obtained from the principals who participated in the study.

Research results are organized into two interrelated sections that provide information and comparisons upon which the grounded theory in Chapter 5 is based. The two sections are: School Profiles and Instructional Leadership School Comparisons.

School Profiles

School profiles were assembled from school-specific district records (e.g., demographics and in-service data), test score records, and survey instrument results. The six school profiles organize qualitative and quantitative data relevant to instructional leadership and the Process Spelling curricular implementation.

School 1

June school enrollments for grades 1-5 for the 1998-99, 1999-00, and 2000-01 school years were 497, 497, and 500, respectively (Bozeman Public Schools, 2001e).

Free and reduced lunch percentages have remained in the mid-20's since the 1997-98 school year, with a rate of 26% in the 2000-01 school year. Student demographics have varied only slightly and consisted of less than 1% American Indian, 3% Asian, 1% Hispanic, less than 1% African-American, and 94% White (Bozeman Public Schools, 2001e).

Staff consisted of 20 classroom teachers with 12 teachers serving grades 1 through 3. Principal 1 considered School 1 to be "pretty unique." He considered the school climate healthy and stated, "I was very fortunate in being able to select a staff I thought would work best...Everyone works so well together... We made a commitment to not let problems fester. We would discuss things and then come to solutions."

Staff judged parental support to be excellent. Principal 1 credited student achievement to a combination of teacher expertise and parental support. He stated, "We have done pretty well academically considering our wide range (of student abilities)."

At the time of the study, School 1's mission statement read,

The School 1 community will join together to provide our children with the academic and behavioral skills needed to reason and communicate responsibly in society. These skills will be taught in a safe and caring environment where individual differences are accepted. (Bozeman Public Schools, 2001f)

Spelling Assessment Information. Two tests were administered to Bozeman Public School district primary students in the 1998-99, 1999-00, and 2000-01 school years. The CTBS was administered to third grade students in School 1 during the month of April for these school years. The TWS-3 was administered to first, second, and third grade students in the fall and spring of the 1998-99, 1999-00, and 2000-01 school years.

CTBS Descriptive Statistics. Descriptive statistics for School 1 CTBS results are shown on Table 8. All statistics are based on national percentile test score values.

Table 8. School 1 CTBS Descriptive Statistics.

Grade	Year	N	Mean	Median	SD	Min	Max
3	1998-99	86	56.90	56.00	29.83	2	99
3	1999-00	85	57.09	56.00	27.12	2	99
3	2000-01	77	57.57	56.00	28.25	4	99

CTBS Inferential Statistics. A Kruskal-Wallis test was conducted to evaluate differences in CTBS median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(4, N = 248) = 0.15, p = .992$.

TWS-3 Descriptive Statistics. Descriptive statistics for School 1 TWS-3 results are shown on Table 9. All statistics are based on raw test score values.

Table 9. School 1 TWS-3 Descriptive Statistics.

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
1	1998-99	Fall	69	8.13	7.00	6.79	0	34
1	1999-00	Fall	78	7.15	6.00	5.31	0	27
1	2000-01	Fall	79	7.19	7.00	5.37	0	24
1	1998-99	Spring	68	24.51	24.50	8.19	4	44
1	1999-00	Spring	78	29.21	29.00	9.01	11	55
1	2000-01	Spring	79	24.19	23.00	8.56	6	49
2	1998-99	Fall	82	19.13	19.00	7.14	3	40
2	1999-00	Fall	71	19.90	18.00	9.43	3	41
2	2000-01	Fall	83	22.81	23.00	8.99	0	46
2	1998-99	Spring	77	28.79	28.00	9.03	7	53
2	1999-00	Spring	79	32.44	31.00	10.86	11	56
2	2000-01	Spring	83	32.86	32.00	10.64	12	63
3	1998-99	Fall	87	27.36	27.00	11.20	0	51
3	1999-00	Fall	78	33.65	33.00	10.83	5	53
3	2000-01	Fall	78	30.58	29.00	11.70	9	65
3	1998-99	Spring	87	43.00	44.00	14.13	5	72
3	1999-00	Spring	85	46.95	45.00	16.34	13	85
3	2000-01	Spring	76	45.61	44.50	15.95	15	80

TWS-3 Inferential Statistics

Grade 3 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 243) = 12.51, p = .002$. The eta square index of .052 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than both the 1998-99 and 2000-01 median test scores. The 1998-99 and 2000-01 median test scores were not significantly different.

Grade 3 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 248) = 1.86, p = .394$.

Grade 2 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 236) = 8.69, p = .013$. The eta square index of .037 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was greater and significantly different than both the 1998-99 and 1999-00 median test scores. The 1998-99 and 1999-00 median test scores were not significantly different.

Grade 2 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test

was significant, $\chi^2(2, N = 239) = 6.95, p = .031$. The eta square index of .029 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than the 1998-99 median test score and the 2000-01 median test score was greater and significantly different than the 1998-99 median test score. The 1999-00 and 2000-01 median test scores were not significantly different.

Grade 1 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 226) = .399, p = .819$.

Grade 1 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 225) = 14.41, p = .001$. The eta square index of .064 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than both the 1998-99 and 2000-01 median test scores. The 1998-99 and 2000-01 median test scores were not significantly different.

TWS-3 Pooled Test Scores for Grades 1-3. School 1 pooled TWS-3 results are shown in Table 10. Pooled means are based on raw TWS-3 scores for grades 1-3. As described in Chapter 3; grade level TWS-3 scores were combined into a pooled test score average for each school to provide a basis for inter-school comparisons.

Table 10. School 1 TWS-3 Pooled Means.

Year	Test Period	Pooled Mean
1998-99	Fall	18.21
1999-00	Fall	20.24
2000-01	Fall	20.19
1998-99	Spring	32.10
1999-00	Spring	36.20
2000-01	Spring	34.22

For clarity, a narrative version of School 1 grade and school level test score patterns are provided below. The narrative includes descriptions of pooled grade level test score patterns and grade specific patterns of significant year-to-year and two-year test score differences.

School level fall TWS-3 scores increased between the 1998-99 and 1999-00 school years (Figure 5) in association with a significant grade 3 test score increase (Appendix H); school level fall TWS-3 scores decreased slightly between the 1999-00 and 2000-01 school years although at the grade level, there was a significant test score increase for grade 2 combined with a significant decrease for grade 3. School level spring TWS-3 scores increased between the 1998-99 and 1999-00 school years in association with significant grade 1 and grade 2 test score increases; school level spring TWS-3 scores decreased between the 1999-00 and 2000-01 school years in association with a significant grade 1 test score decrease. Grade 2 realized a significant TWS-3 score increase for both the fall and spring tests across the three school year period of 1998-99 to 2000-01. On average, CTBS scores improved slightly over the study period; however, there were no significant year-to-year or three school year differences in the grade 3 CTBS data for School 1.

Principal Profile. At the time of the interview, Principal 1 had eight years of teaching experience and 28 years experience as a principal, the last nine of which were at School 1. The 2000-01 school year was Principal 1's last year in the district before his retirement. Principal 1 considered effective principals to have high expectations, a sense of humor, and good communication skills, act as a resource person, and a willingness to "look at all avenues of a problem to arrive at a solution." Principal 1 considered himself to be most effective in the following skills of instructional leadership: resource provider, listener, and being "always there for the teacher."

Principal Perceptions of Process Spelling Curriculum and Curriculum

Implementation. Principal 1 described Process Spelling as "a wonderful program." He considered it a good instructional strategy that was relatively easy to promote to staff. Before formal adoption, 70% of the school staff had been in-serviced in Process Spelling. He recalled, "Once we did the pilot (curricular program), everyone did it. The feedback from the staff was excellent."

Principal 1 considered the approach to any type of curricular implementation important to its ultimate success. At School 1, Principal 1 credited staff leadership and a "core of strong people." He stated, "Everyone made a commitment to try." In hindsight, however, Principal 1 believed the district-wide implementation may have "moved too fast." Principal 1 reiterated the importance of "implementation approach." He stated the development of the district-wide adoption seemed "too rapid to some teachers."

When asked about School 1's performance on spelling assessments, Principal 1 stated, "It (Process Spelling) has made a difference. Even last year our spelling scores had improved."

Results of Principal 1's Instructional Leadership Assessments. Since 1997, 17 teachers taught at the first, second, and third grade levels. Seventeen informed consents were sent and seven teachers agreed to participate. A total of seven primary teachers and the principal responded to the Instructional Leadership Assessment instruments. This represented 41% of the original primary teaching staff.

Visibility. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to principal visibility are provided in Table 11. For each statement, the principal response is provided in parentheses.

Table 11. Frequencies of Responses Regarding Visibility Behaviors of the Principal.

Visibility Belief 1: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis. [*Principal 1: Strongly agree]

	Frequency	Percent
Strongly agree	0	0
Agree	4	57.1
Disagree	2	28.6
Strongly disagree	1	14.3

Visibility Belief 2: My principal actively participates in staff development activities related to Process Spelling. [*Principal 1: Strongly agree]

	Frequency	Percent
Strongly agree	1	14.3
Agree	2	28.6
Disagree	3	42.9
Strongly disagree	0	0

Visibility Belief 3: My principal includes Process Spelling instruction as part of the formal evaluation process. [*Principal 1: Strongly agree]

	Frequency	Percent
Strongly agree	0	0
Agree	3	42.9
Disagree	3	42.9
Strongly disagree	1	14.3

A majority of teacher respondents agreed informal observations occurred on a weekly basis. Principal 1 strongly agreed that informal observations occurred on a weekly basis. Respondents' perceptions were mixed regarding the principal's participation in staff development activities related to Process Spelling, although Principal 1 strongly agreed such participation occurred. A majority of teacher respondents did not agree that Process Spelling was part of the formal evaluation process, although Principal 1 stated Process Spelling was part of the evaluation process.

Communicator. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities that related to the principal as a communicator are provided in Table 12. For each statement, the principal response is provided in parentheses.

Table 12. Frequencies of Responses Regarding Communicator Behaviors of the Principal.

Communicator Frequency 1: My principal conveys high expectations for teacher and student performance. [*Principal 1: Strongly agree]

	Frequency	Percent
At least 1 time per month	6	85.7
At least 1 time every 3 months	1	14.3
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 2: My principal discusses Process Spelling with teachers at faculty meetings. [*Principal 1: Strongly agree]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	4	57.1
At least 1 time every 6 months	1	14.3
One time per year or less	1	14.3

Communicator Frequency 3: My principal acknowledges or compliments teachers for their efforts or performance with regards to spelling instruction. [*Principal 1: Strongly agree]

	Frequency	Percent
At least 1 time per month	2	28.6
At least 1 time every 3 months	2	28.6
At least 1 time every 6 months	1	14.3
One time per year or less	2	28.6

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [*Principal 1: Strongly agree]

	Frequency	Percent
At least 1 time per month	5	71.4
At least 1 time every 3 months	2	28.6
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Belief 1: My principal set and expressed his/her expectations for Process Spelling instruction to staff when the program was started. [*Principal 1: Strongly agree]

	Frequency	Percent
Strongly agree	1	14.3
Agree	5	71.4
Disagree	1	14.3
Strongly disagree	0	0

Communicator Belief 2: My principal sets and expresses his/her expectations with regards to Process Spelling instruction to teachers new to my school. [*Principal 1: Strongly agree]

	Frequency	Percent
Strongly agree	1	14.3
Agree	4	57.1
Disagree	2	28.6
Strongly disagree	0	0

Communicator Belief 3: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month. [*Principal 1: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	3	42.9
Disagree	4	57.1
Strongly disagree	0	0

There was strong evidence from survey respondents to suggest Principal 1 conveyed high expectations for teacher and student performance on a monthly basis. Principal 1 concurred. Process Spelling was perceived by a majority of respondents to have been discussed at staff meetings at least one time every three months. Principal 1 perceived this to have occurred at least one time per month.

The perception among survey respondents regarding principal acknowledgment of teachers for their efforts or performance with regards to spelling instruction was mixed, although Principal 1 perceived such acknowledgment to have occurred on a monthly basis. Survey responses also varied in perceptions regarding the frequency of reinforcement of Process Spelling expectations; again, the perception of Principal 1 was that reinforcement occurred on a monthly basis. There was, in fact, agreement among all survey respondents that teachers were actively involved in school-wide decision-making on a monthly basis.

Instructional Resource. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities that related to the principal as an instructional resource are provided in Table 13. For each statement, the principal response is provided in parentheses.

Table 13. Frequencies of Responses Regarding Instructional Resource Behaviors of the Principal.

Instructional Resource Frequency 1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussions. [*Principal 1: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	14.3
At least 1 time every 3 months	0	0
At least 1 time every 6 months	2	28.6
One time per year or less	3	42.9

Instructional Resource Frequency 2: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities. [*Principal 1: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	14.3
At least 1 time every 3 months	3	42.9
At least 1 time every 6 months	1	14.3
One time per year or less	2	28.6

Instructional Resource Frequency 3: My principal uses spelling achievement test results to assess the school's progress in spelling. [*Principal 1: One time per year or less]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	2	28.6
At least 1 time every 6 months	2	28.6
One time per year or less	3	42.9

Instructional Resource Belief 1: Leadership and the direction of the school's mission have been consistent over the last five years. [*Principal 1: Agree]

	Frequency	Percent
Strongly agree	2	28.6
Agree	4	57.1
Disagree	1	14.3
Strongly disagree	0	0

The sharing of the latest research findings on teaching reading, spelling, writing, and reading to teachers by Principal 1 through the use of copies of journal articles, books,

memos, or discussions appears to have occurred with no regularity. Principal 1 recalled such sharing to have occurred at least one time every three months. Spelling achievement test results were reviewed by teachers on an infrequent basis, and by Principal 1 one time per year or less, as the CTBS assessment results were published or TWS-3 results were shared by teachers.

Evidence suggested survey respondents believed leadership and the direction of the school's mission to have been consistent over the last five years. Principal 1 agreed that the school's leadership and mission have been consistent.

Resource Provider. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities that related to the principal as a resource provider are provided in Table 14. For each statement, the principal response is provided in parentheses.

Table 14. Frequencies of Responses Regarding Resource Provider Behaviors of the Principal.

Resource Provider Frequency 1: My principal uses the teacher-leader concept at the school site for Process Spelling. [*Principal 1: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	14.3
At least 1 time every 3 months	4	57.1
At least 1 time every 6 months	0	0
One time per year or less	2	28.6

Resource Provider Frequency 2: My principal encourages on-going teacher collaboration regarding instruction in all areas. [*Principal 1: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	4	57.1
At least 1 time every 3 months	1	14.3
At least 1 time every 6 months	2	28.6
One time per year or less	0	0

Resource Provider Frequency 3: My principal encourages and provides for action research. [*Principal 1: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	2	28.6
At least 1 time every 6 months	0	0
One time per year or less	5	71.4

There was evidence to suggest the teacher-leader concept at School 1 occurred with regularity, at least one time every three months. Principal 1 indicated a frequency of at least one time per month. Teacher collaboration occurred, although survey responses did not suggest a particular frequency, while Principal 1 perceived collaboration to have occurred on a monthly basis. Action research was not perceived to have occurred with regular frequency, although Principal 1 perceived action research to have occurred at least one time every three months.

Beliefs. Frequencies and percents of teacher responses regarding statements concerning Process Spelling and beliefs relating to instructional leadership behaviors of the principal and their relationship to teacher efficacy are provided in Table 15. For each statement, the principal response is provided in parentheses.

Table 15. Frequencies of Responses Regarding Belief Statements Regarding Process Spelling and Leadership.

Belief Statement 1: I believe Process Spelling is an effective instructional methodology. [*Principal 1: Strongly agree]

	Frequency	Percent
Strongly agree	4	57.1
Agree	3	42.9
Disagree	0	0
Strongly disagree	0	0

Belief Statement 2: I consider myself effective in the delivery of Process Spelling.
[*Principal 1 (for teachers in school): Agree]

	Frequency	Percent
Strongly agree	5	71.4
Agree	2	28.6
Disagree	0	0
Strongly disagree	0	0

Belief Statement 3: I feel the leadership behaviors of my principal make me a more effective teacher. [*Principal 1 (for one's own leadership behaviors): Strongly agree]

	Frequency	Percent
Strongly agree	3	42.9
Agree	3	42.9
Disagree	1	14.3
Strongly disagree	0	0

Belief statements regarding Process Spelling and instructional leadership, in general, were positive for both teacher respondents and Principal 1.

School 2

June school enrollments for grades 1-5 for the 1998-99, 1999-00, and 2000-01 school years were 297, 286, and 284, respectively (Bozeman Public Schools, 2001e). Class sizes also remained relatively stable with approximately 22 students in each primary class, and 25 students in each upper elementary class. Free and reduced lunch percentages have remained steady since the 1997-1998 school year, with a 14% rate during the 2000-01 school year. Student demographics have varied only slightly and consisted of 3% Asian, 1% Hispanic, and 96% White, and less than 1% American Indian (Bozeman Public Schools, 2001e). There was very little student transiency. Eleven classroom teachers served grades K through 5. Six teachers worked in the primary classrooms.

School 2's mission statement was developed in 1991. Reviewed every two years, at the time of the study it stated,

The School 2 community is dedicated to the mission of providing an artistically rich environment for every student, with powerful arts and academic encounters at the core of all curricular areas and arts disciplines. (Bozeman Public Schools, 2001g)

Principal 2 emphasized how student population and parent population make a "big difference" for the school. "We enjoy huge parent support...I don't think it happens by accident...Our school is a community center." Principal 2 credited the locale of the school, i.e., just off Main Street in the Bozeman downtown, for this community focus.

Over the years, Principal 2 has made accommodations for individual students, depending on their needs. She referred to a gifted student who required many modifications to her instructional program and much parent contact. When situations or students like this arise, she said, "You change...sometimes you have to do a lot of individual things."

Principal 2 described School 2's SES as mixed. "We have very high and very low... There is no real in-between group." She strongly believed SES to affect student achievement.

When reflecting on her certified staff of 12 classroom teachers, Principal 2 stated, "We have an incredibly close staff. They are nurturing to each other. I have the best situation!" Principal 2's staff has been very stable, and since student enrollment has been steady over the last several years, Principal 2 stated, "I haven't hired a teacher in seven years. The mean length of service for my teachers is 22 years." She indicated

leadership depends on school characteristics, and her particular leadership style had much to do with the experience and length of service of the staff. "If I had younger teachers, maybe it would be different," she said.

Principal 2 strongly believed principal leadership to have a direct effect on student achievement. She stated, "Part of our district and school vision is that every student will achieve." By promoting instruction and programs, she has been able to impact achievement. She provided the example of the after school program she supported, and stated, "It (the after school program) makes sure kids are safe...all those programs are part of that – they are principal-directed and they directly affect student achievement."

Spelling Assessment Information. Two tests were administered to the Bozeman Public School District primary students in the 1998-99, 1999-00, and 2000-01 school years. The CTBS was administered to third grade students in School 1 during the month of April for these school years. The TWS-3 was administered to first, second, and third grade students in the fall and spring of the 1998-99, 1999-00, and 2000-01 school years.

CTBS Descriptive Statistics. Descriptive statistics for School 2 CTBS results are shown in Table 16. All statistics are based on national percentile test score values.

Table 16. School 2 CTBS Descriptive Statistics.

Grade	Year	N	Mean	Median	SD	Min	Max
3	1998-99	49	56.02	56.00	31.89	4	99
3	1999-00	45	57.09	56.00	27.37	2	99
3	2000-01	44	57.32	56.00	32.03	6	99

CTBS Inferential Statistics. A Kruskal-Wallis test was conducted to evaluate differences in CTBS median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(4, N = 138) = .084, p = .959$.

TWS-3 Descriptive Statistics. Descriptive statistics for School 2 TWS-3 results are shown in Table 17. All statistics are based on raw test score values.

Table 17. School 2 TWS-3 Descriptive Statistics.

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
1	1998-99	Fall	48	3.92	2.00	4.65	0	18
1	1999-00	Fall	44	4.09	3.00	4.18	0	14
1	2000-01	Fall	44	5.84	4.50	6.15	0	34
1	1998-99	Spring	46	20.72	19.50	9.34	3	50
1	1999-00	Spring	43	20.02	19.00	7.65	1	37
1	2000-01	Spring	43	23.14	24.00	9.88	0	61
2	1998-99	Fall	44	16.52	15.00	6.90	2	30
2	1999-00	Fall	43	20.84	19.00	8.51	6	46
2	2000-01	Fall	48	16.33	15.50	6.40	1	33
2	1998-99	Spring	47	29.66	29.00	8.83	13	53
2	1999-00	Spring	48	31.63	28.50	12.46	6	65
2	2000-01	Spring	48	32.08	31.00	11.53	1	61
3	1998-99	Fall	44	27.32	25.00	10.06	5	48
3	1999-00	Fall	44	29.27	27.00	11.19	7	63
3	2000-01	Fall	44	31.89	31.00	13.04	12	65
3	1998-99	Spring	46	44.76	42.50	13.90	12	70
3	1999-00	Spring	40	42.93	42.00	13.67	19	67
3	2000-01	Spring	42	46.55	44.50	13.53	16	80

TWS-3 Inferential Statistics

Grade 3 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 132) = 2.20, p = .333$.

Grade 3 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test

was nonsignificant, $\chi^2(2, N = 128) = 1.21, p = .547$.

Grade 2 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 135) = 9.59, p = .008$. The eta square index of .072 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than both the 1998-99 and 2000-01 median test scores. The 1998-99 and 2000-01 median test scores were not significantly different.

Grade 2 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 143) = 1.01, p = .604$.

Grade 1 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 136) = 3.80, p = .150$.

Grade 1 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 132) = 2.72, p = .257$.

TWS-3 Pooled Test Scores for Grades 1-3. School 2 pooled TWS-3 results are shown in Table 18. Pooled means are based on raw TWS-3 scores for grades 1-3. As described in Chapter 3, grade level TWS-3 scores were combined into a pooled test score average for each school to provide a basis for inter-school comparisons.

Table 18. School 2 TWS-3 Pooled Means.

Year	Test Period	Pooled Mean
1998-99	Fall	15.92
1999-00	Fall	18.07
2000-01	Fall	18.02
1998-99	Spring	31.71
1999-00	Spring	31.52
2000-01	Spring	33.92

Principal 2 perceived spelling achievement test scores to be improving at School 2. She stated, "Yes, it has definitely made a difference." She was unsure of the extent to which they were improving.

For clarity, a narrative version of School 2 grade and school level test score patterns are provided below. The narrative includes descriptions of pooled grade level test score patterns and grade specific patterns of significant year-to-year and two-year test score differences.

School level fall TWS-3 scores increased between the 1998-99 and 1999-00 school years (Figure 5) in association with a significant grade 2 test score increase (Appendix H); school level fall TWS-3 scores decreased slightly between the 1999-00 and 2000-01 school years in association with a significant grade 2 test score decrease. School level spring TWS-3 scores decreased slightly between the 1998-99 and 1999-00 school years although there were no significant grade level test score differences; school level spring TWS-3 scores increased between the 1999-00 and 2000-01 school years although there were no significant grade level test score differences. School 2 had the least number of significant year-to-year TWS-3 score differences with respect to the other

five study schools and was the only school with no significant TWS-3 score increases across the three school year period of 1998-99 to 2000-01. On average, CTBS scores improved slightly over the study period; however, there were no significant year-to-year or three school year differences in the grade 3 CTBS data for School 2.

Principal Profile. Principal 2 spent 23 years as a teacher and served as a principal for 12 years, all of them at School 2. According to Principal 2, effective instructional leadership involves:

- Ability to inspire vision of excellence,
- Strong communication to parents, teachers, and community,
- Solid understanding of best instructional methods, and
- Constantly updating understandings according to research.

She emphasized effective principals also have a high sense of the value of work, i.e., a strong work ethic.

Principal 2 believed she has been effective because she made herself available to teachers, parents, and students. She has placed a strong emphasis on communication, and stated, "Parents and teachers see me as a partner rather than someone who is didactic."

Principal Perceptions of Process Spelling Curriculum and Curriculum

Implementation. Principal 2 viewed Process Spelling as an "excellent" curriculum, but indicated "there is room for some changes; pieces that I think could be modified." She was concerned that some parents had difficulty accepting this program after being used to a more traditional approach, which included weekly word lists. She stated, "Parents need to know and understand the process. Good teachers do this; they help parents understand

the program.” This reservation about the curriculum caused some teachers to make modifications to the Process Spelling program. According to Principal 2, teachers conduct Process Spelling for the week, and then send home a word list. At the end of the following week, there is a more formal test. This modification, according to Principal 2, evolved through “teacher conversations.”

Although 100% of the staff received Process Spelling professional development prior to the District’s formal adoption, implementation of Process Spelling at School 2 was challenging. Principal 2 stated, “We’re (School 2) not the ‘star’ in terms of implementation.” She perceived a reluctance from the more experienced teachers during adoption of Process Spelling. She noted the implementation took place over several years. While she acknowledged support from the district in the implementation efforts, she stated, “I don’t like phase-in curricular programs. I think it is more exciting and creates more viability if it (a curricular innovation/implementation) is done at the same time.” She cited training as one of the difficulties of such a phase-in. “One teacher wasn’t trained until the very end and she still has less buy-in than others who were trained earlier.” Principal 2 emphasized that in order to be effective, “leadership in a curricular innovation has to be both from the district and from the school.”

Results of Principal 2’s Instructional Leadership Assessments. Since 1997, six teachers taught at the first, second, and third grade levels. Six informed consents were sent and three teachers agreed to participate. A total of three primary teachers and the principal responded to the Instructional Leadership Assessment instruments. This represented 50% of the original primary teaching staff.

Visibility. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to principal visibility are provided in Table 19. For each statement, the principal response is provided in parentheses.

Table 19. Frequencies of Responses Regarding Visibility Behaviors of the Principal.

Visibility Belief 1: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis. [Principal 2: Disagree]

	Frequency	Percent
Strongly agree	1	33.3
Agree	2	66.7
Disagree	0	0
Strongly disagree	0	0

Visibility Belief 2: My principal actively participates in staff development activities related to Process Spelling. [Principal 2: Strongly agree]

	Frequency	Percent
Strongly agree	2	66.7
Agree	1	33.3
Disagree	0	0
Strongly disagree	0	0

Visibility Belief 3: My principal includes Process Spelling instruction as part of the formal evaluation process. [Principal 2: Agree]

	Frequency	Percent
Strongly agree	2	66.7
Agree	1	33.3
Disagree	0	0
Strongly disagree	0	0

Survey respondent perceptions regarding the frequency of informal observations by Principal 2 were mixed. Principal 2 disagreed that informal observations occurred on a weekly basis.

All survey respondents agreed, to some extent, Principal 2 participated in staff development activities related to Process Selling. Principal 2 agreed that Process Spelling was included in the formal evaluation process.

Communicator. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to the principal as a communicator are provided in Table 20. For each statement, the principal response is provided in parentheses.

Table 20. Frequencies of Responses Regarding Communicator Behaviors of the Principal.

Communicator Frequency 1: My principal conveys high expectations for teacher and student performance. [Principal 2: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	66.7
At least 1 time every 3 months	1	33.3
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 2: My principal discusses Process Spelling with teachers at faculty meetings. [Principal 2: At least 1 time every 6 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	2	66.7
At least 1 time every 6 months	1	33.3
One time per year or less	0	0

Communicator Frequency 3: My principal acknowledges or compliments teachers for their efforts or performance with regards to spelling instruction. [Principal 2: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	3	100
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [Principal 2: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	3	100
At least 1 time every 3 months	0	0
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Belief 1: My principal set and expressed his/her expectations for Process Spelling instruction to staff when the program was started. [Principal 2: Strongly agree]

	Frequency	Percent
Strongly agree	2	66.7
Agree	1	33.3
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 2: My principal set and expresses his/her expectations with regard to Process Spelling instruction to teachers new to my school. [Principal 2: n/a, as there have been no new hires]

	Frequency	Percent
Strongly agree	1	33.3
Agree	2	66.7
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 3: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month. [Principal 2: Strongly disagree]

	Frequency	Percent
Strongly agree	0	0
Agree	1	33.3
Disagree	2	66.7
Strongly disagree	0	0

Survey responses supported a climate of high expectations for teacher and student performance. According to Principal 2, high expectations provided the foundation for all leadership, and instructional leadership practices and beliefs were based on high expectations. Principal 2 emphasized effective principals as being “inspirational” and stated, “Principals can have a vision of what they are thinking – about what is good. They

present a consistent vision of excellence; it doesn't change from year to year – this way, parents know, teachers know, students know.” One staff member commented, “She is supportive of the program, has attended training, and sets high expectations for spelling performance.”

The discussion of Process Spelling did not appear to have a high priority at faculty meetings, i.e., Principal 2 and staff respondents indicated such discussions occurred at least one time every three to six months, although one staff member indicated, “We discuss ideas at staff meetings and individually share information brought to us by the spelling committee representative.” In addition, Principal 2 strongly disagreed that expectations regarding Process Spelling instruction were reinforced to staff on a monthly basis. Two staff members perceived reinforcement to have occurred at least one time every six months, and one respondent perceived reinforcement to have occurred at least one time every three months. Principal 2 stated, “For me to be didactic or pretend to be that, I can't do that. Other principals tell teachers, ‘You must do this, or you must do that...’ That is not my style. I'm a real consensus builder – community builder. It is what I am most comfortable with.”

While Principal 2 perceived her acknowledgement of teacher effort with regard to Process Spelling occurred at least once a month, all three survey respondents perceived such acknowledgement to have occurred with a frequency of at least one time every three months.

Instructional Resource. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating

to the principal as an instructional resource are provided in Table 21. For each statement, the principal response is provided in parentheses.

Table 21. Frequencies of Responses Regarding Instructional Resource Behaviors of the Principal.

Instructional Resource Frequency 1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussions. [Principal 2: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	66.7
At least 1 time every 3 months	1	33.3
At least 1 time every 6 months	0	0
One time per year or less	0	0

Instructional Resource Frequency 2: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities. [Principal 2: At least 1 time every 6 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	33.3
At least 1 time every 6 months	1	33.3
One time per year or less	1	33.3

Instructional Resource Frequency 3: My principal uses spelling achievement test results to assess the school's progress in spelling. [Principal 2: At least 1 time every 6 months]

	Frequency	Percent
At least 1 time per month	1	33.3
At least 1 time every 3 months	1	33.3
At least 1 time every 6 months	0	0
One time per year or less	1	33.3

Instructional Resource Belief 1: Leadership and the direction of the school's mission have been consistent over the last five years. [Principal 2: Strongly agree]

	Frequency	Percent
Strongly agree	2	66.7
Agree	1	33.3
Disagree	0	0
Strongly disagree	0	0

There was evidence to support sharing of latest research findings about spelling, writing, and reading to staff on a frequent, regular basis. Principal 2 stated, "All I can do is lead them (teachers) to what is good. I have to *prove* that new instructional methods are effective."

Frequent sharing of ideas regarding Process Spelling at staff meetings did not occur. Principal 2 and one teacher respondent indicated such sharing occurred at least one time every six months while the other respondent indicated such sharing occurred with a frequency of at least one time every three months. Staff perceptions appeared mixed regarding the use of spelling achievement test results to assess the school's progress in spelling. All respondents agreed the leadership and the direction of the school's mission were consistent over the last five years.

Resource Provider. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to the principal as a resource provider are provided in Table 22. For each statement, the principal response is provided in parentheses.

Table 22. Frequencies of Responses Regarding Resource Provider Behaviors of the Principal.

Resource Provider Frequency 1: My principal uses the teacher-leader concept at the school site for Process Spelling. [Principal 2: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	66.7
At least 1 time every 6 months	0	0
One time per year or less	0	0

Resource Provider Frequency 2: My principal encourages on-going teacher collaboration regarding instruction in all areas. [Principal 2: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	66.7
At least 1 time every 3 months	1	33.3
At least 1 time every 6 months	0	0
One time per year or less	0	0

Resource Provider Frequency 3: My principal encourages and provides for action research. [Principal 2: One time per year or less, informally]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	0	0
At least 1 time every 6 months	0	0
One time per year or less	3	100

Survey responses supported principal leadership as encouraging of teacher collaboration. Principal 2 stated,

I have a very different style. Teachers don't see me as an authority figure. They see me as a partner and as a facilitator. There are times when you have to move into that other mode, but mostly...I work to be a facilitator. The other is not my style.

She continued,

One of our school goals is lifelong learning...Our school climate shows an enthusiasm about learning...Teachers are the same – they love to listen to each other talk about what's been successful. The teachers love to get together to talk about instruction and to share... Despite the fact they have many, many years, they're still learning. There is a big desire among staff to be the best they can be.

Survey evidence did not support the presence of a strong teacher-leader. Principal 2 stated, "The goal for the teacher-leader was to present issues to staff and keep the spelling conversation alive." Principal 2 characterized the teacher-leader as being "not all that involved" and suggested, "perhaps she wasn't given a vision." Principal 2 stated she emphasized workshops in effective instruction to all her staff.

Beliefs. Table 23 provides frequencies and percents of teacher responses regarding statements concerning Process Spelling and beliefs relating to instructional leadership behaviors of the principal and their relationship to teacher efficacy. For each statement, the principal response is provided in parentheses:

Table 23. Frequencies of Responses Regarding Belief Statements Regarding Process Spelling and Leadership.

Belief Statement 1: I believe Process Spelling is an effective instructional methodology.
[Principal 2: Strongly agree]

	Frequency	Percent
Strongly agree	3	100
Agree	0	0
Disagree	0	0
Strongly disagree	0	0

Belief Statement 2: I consider myself effective in the delivery of Process Spelling.
[Principal 2: Agree]

	Frequency	Percent
Strongly agree	2	66.7
Agree	1	33.3
Disagree	0	0
Strongly disagree	0	0

Belief Statement 3: I feel the leadership behaviors of my principal make me a more effective teacher. [Principal 2 (for one's own leadership behaviors): Strongly agree]

	Frequency	Percent
Strongly agree	2	66.7
Agree	1	33.3
Disagree	0	0
Strongly disagree	0	0

Survey evidence supported agreement regarding beliefs about Process Spelling. All respondents indicated Process Spelling was an effective instructional methodology. Two teacher respondents agreed strongly they considered themselves effective in the delivery of Process Spelling, while Principal 2 and one teacher respondent agreed they

considered themselves effective in the delivery of Process Spelling. Respondents also agreed, three strongly, the leadership behaviors of the principal made them more effective teachers.

School 3

June school enrollments for grades 1-5 for the 1998-99, 1999-00, and 2000-01 school years were 279, 275, and 293, respectively (Bozeman Public Schools, 2001e). School 3 had the district's highest percentage of students receiving free and reduced lunch. During the 1997-98 school year, this percentage was 49.72; during the 2000-01 school year, the percentage was 41. Approximately 10% of students were American Indian, 3% Asian, less than 1% Hispanic, 1% African American, and 80% White (Bozeman Public Schools, 2001e).

Principal 3 stated, "Demography hasn't changed (much) since 1993; (it is) very interesting that our demographic characteristics have remained constant." He noted that families are, in fact, changing, "We're getting so many kids with interrupted school careers due to high mobility families." According to Principal 3, this trend has caused the staff of 13 certified teachers to be heavily involved in the Student Assistance Team (SAT) process so that teachers may best determine specific ways to help students who are struggling academically or socially. In addition, Principal 3 stated, "I spend a lot of time working with parent support."

School 3 had a strategic plan in place, which included a mission statement, school parameters to uphold the mission statement, various belief statements related to

behavior and teaching and learning, and short-term and long-term goals and strategies.

Principal 3's expectation was that staff members participate as members of School 3's Strategic Planning Committee.

At the time of the study, School 3's Mission Statement,

The School 3 community dedicates itself to helping each child become an academically successful and socially responsible citizen by providing quality instruction, support, and time. To this end, we work together in a respectful, nurturing manner to create a safe environment that embraces children and families of many cultures and nationalities. Through challenging learning experiences across the curriculum with an emphasis on literacy and scientific inquiry, we focus on studies of our local environment as a model for understanding the wider world, (Bozeman Public Schools, 2001h)

underscored the international focus of the school while supporting literacy and scientific inquiry. The mission statement was developed through a process involving staff and community members.

The operation of the school's instructional program was founded on the following parameters:

1. We will not accept any new program or retain any existing program without:
 - participation in development by representation of those affected
 - sufficient funding, support, and personnel
 - provision for planned, ongoing, systematic staff training developed by those affected
 - defined evaluation and self-correction processes
 - clear demonstration for staff implementation of the activity or practice
 - demonstration by research that the program has a solid basis
 - alignment with our beliefs and mission statement
2. We will not tolerate any person or practice that impedes a child's right to reach his or her full potential.
3. We will employ people who will subscribe to and implement our mission statement and beliefs.
4. We will only implement educational practices that promote systemic continuous progress for all students.
 - Learning and teaching beliefs also guide School 3's programming:

- Learning has meaning when it is actively experienced, personal, and applied.
- Excellence in teaching is necessary to achieve excellence in learning.
- Children learn at different rates and must be challenged to learn at their appropriate instructional level.
- Wonder, excitement, and curiosity are key components of learning.
- Good teaching requires sustained life-long learning by teachers. (Bozeman Public Schools, 2000a)

School 3's goals and strategies were developed in 1997 and were listed in its

Strategic Plan (Bozeman Public Schools, 2000a):

Goal #1: Every student, staff member, and parent will actively implement our building goals for the Montana Behavior Initiative.

Goal #2: Every School 3 student will learn to his/her potential.

Goal #3: All staff and students will engage in scientific inquiry.

Goal #4: School 3 will be a focus of multicultural and international learning opportunities for staff, students, parents, and the community.

Goal #5: Every School 3 third grade student will read and write on or above grade level.

Goal #5 specifically related to reading and writing, which impact Process

Spelling. Strategies were developed to support Goal #5. These were:

- The School 3 staff will study and implement effective programs of instruction and assessment in reading and writing in addition to those effective instructional practices that they currently implement.
- We will provide on-going discussion, training, and support for the implementation of effective practices in reading and writing.
- As part of our parent involvement program, we will help parents support the development of their children's reading and writing (Bozeman Public Schools, 2000a).

Principal 3's expectation was that teaching staff meet twice a year to examine and reflect upon assessment data and make plans for school-wide instructional improvements based on the assessment data. The findings of these meetings facilitated the framing of the School 3 Strategic Planning Committee deliberations, and also allowed for the development of a yearly school profile.

Principal 3 based his efforts regarding student achievement on the book, Results:

The Key to Continuous School Improvement. He stated,

Last year, I tried to bring staff together to look at student data. We looked at data K-1, 2-3, and 4-5. We met three times... We look at our spelling scores, but more reading and science last year. We also did work on developing procedures for teaching science, i.e., scaffolding and a rubric.

Principal 3 discussed the challenges of defining a concrete process for operationalizing expectations for student achievement, and referred to Schmoker's book, Results.

Under the leadership of Principal 3, teachers focused on the individual student. This was accomplished through the SAT process, which Principal 3 referred to as being "so important."

Spelling Assessment Information. Two tests were administered to the Bozeman Public School District primary students in the 1998-99, 1999-00, and 2000-01 school years. The CTBS was administered to third grade students in School 3 during the month of April for these school years. The TWS-3 was administered to first, second, and third grade students in the fall and spring of the 1998-99, 1999-00, and 2000-01 school years.

CTBS Descriptive Statistics. Descriptive statistics for School 3 CTBS results are shown in Table 24. All statistics are based on national percentile test score values.

Table 24. School 3 CTBS Descriptive Statistics.

Grade	Year	N	Mean	Median	SD	Min	Max
3	1998-99	59	69.66	76.00	25.78	6	99
3	1999-00	44	58.68	66.00	30.44	1	99
3	2000-01	49	49.55	48.00	30.06	2	99

CTBS Inferential Statistics. A Kruskal-Wallis test was conducted to evaluate differences CTBS median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(4, N = 152) = 11.84, p = .003$. The eta square index of .078 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1998-99 median test score was greater and significantly different than the 2000-01 median test scores. There were not any significant differences between median test scores for 1998-99 and 1999-00 or between 1999-00 and 2000-01.

TWS-3 Descriptive Statistics. Descriptive statistics for School 3 TWS-3 results are shown in Table 25. All statistics are based on raw test scores.

Table 25. School 3 TWS-3 Descriptive Statistics.

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
1	1998-99	Fall	48	3.83	1.00	5.58	0	21
1	1999-00	Fall	46	3.54	1.00	6.49	0	40
1	2000-01	Fall	47	6.55	6.00	5.03	0	18
1	1998-99	Spring	41	24.10	21.00	10.23	10	49
1	1999-00	Spring	51	23.73	25.00	11.35	0	52
1	2000-01	Spring	41	23.20	24.00	8.68	4	48
2	1998-99	Fall	56	16.13	15.50	9.04	0	44
2	1999-00	Fall	40	20.48	19.50	9.64	5	53
2	2000-01	Fall	52	21.81	21.50	9.98	3	55
2	1998-99	Spring	49	31.27	29.00	11.59	11	60
2	1999-00	Spring	45	32.20	31.00	13.64	7	73
2	2000-01	Spring	48	38.17	38.00	11.86	14	66
3	1998-99	Fall	56	29.80	30.00	11.84	5	57
3	1999-00	Fall	42	31.81	31.00	13.28	3	62
3	2000-01	Fall	46	30.59	29.00	16.98	4	80
3	1998-99	Spring	56	40.57	39.00	12.59	13	74
3	1999-00	Spring	45	44.64	48.00	14.97	14	71
3	2000-01	Spring	48	38.06	35.00	15.25	10	78

TWS-3 Inferential Statistics

Grade 3 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 144) = .96, p = .620$.

Grade 3 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 149) = 6.14, p = .047$. The eta square index of .041 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than the 2000-01 median test score. There were not any significant differences between median test scores for 1998-99 and 1999-00 or between 1998-99 and 2000-01.

Grade 2 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 148) = 12.03, p = .002$. The eta square index of .082 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1998-99 median test score was lower and significantly different than both the 1999-00 and 2000-01 median test scores. The 1999-00 and 2000-01 median test scores were not significantly different.

Grade 2 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 142) = 9.29, p = .010$. The eta square index of .066 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was greater and significantly different than both the 1998-99 and 1999-00 median test scores. The 1999-00 and 2000-01 median test scores were not significantly different.

Grade 1 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 141) = 17.98, p = .000$. The eta square index of .128 indicates a large effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was greater and significantly different than both the 1998-99 and 1999-00 median test scores. The 1998-99 and 1999-00 median test scores were not significantly different.

Grade 1 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 133) = .16, p = .924$.

TWS-3 Pooled Test Scores for Grades 1-3. School 3 pooled TWS-3 results are shown in Table 26. Pooled means are based on raw TWS-3 scores for grades 1-3. As described in Chapter 3, grade level TWS-3 scores were combined into a pooled test score

average for each school to provide a basis for inter-school comparisons.

Table 26. Pooled TWS-3 results.

Year	Test Period	Pooled mean
1999-00	Fall	16.59
2000-01	Fall	18.61
1998-99	Fall	19.65
1999-00	Spring	31.98
2000-01	Spring	33.52
1998-99	Spring	33.14

Principal 3 perceived spelling achievement to be increasing. A program similar to Process Spelling entitled Mastery Spelling had previously been in place at School 3. "We (School 3) were alone with Mastery Spelling." However, according to Principal 3, scores for the 1992 through 1999 school years did not change dramatically. Principal 3 referred to the difference in the two spelling tests the district used, and emphasized the CTBS was based on proofreading, while the TWS-3 was based on a word list. Principal 3 asked, "Is it improving in kids' spontaneous writing? That's what I want to know—it is still a self-contained program."

For clarity, a narrative version of School 3 grade and school level test score patterns are provided below. The narrative includes descriptions of pooled grade level test score patterns and grade specific patterns of significant year-to-year and two-year test score differences.

School level fall TWS-3 scores increased between the 1998-99 and 1999-00 school years (Figure 5) in association with a significant grade 2 test score increase (Appendix H); school level fall TWS-3 scores increased between the 1999-00 and 2000-01 school years in association with a significant grade 1 test score increase. School level

spring TWS-3 scores increased slightly between the 1998-99 and 1999-00 school years and there were no significant grade level test score differences; school level spring TWS-3 scores decreased slightly between the 1999-00 and 2000-01 school years although at the grade level, there was a significant test score increase for grade 2 combined with a significant decrease for grade 3. Grade 1 realized a significant TWS-3 score increase for the fall test across the three school year period of 1998-99 to 2000-01, and grade 2 realized a significant TWS-3 score increase for both the fall and spring tests across the three school year period of 1998-99 to 2000-01. On average, CTBS scores declined rapidly over the study period associated with a significant test score decrease over the three year study period. School 3 had the only significant CTBS score difference among the six study schools and also the largest average year-to-year and three school year period CTBS score differences.

Principal Profile. Principal 3 served for 13 years as a teacher, and spent the last 16 years of his career in education as a building principal. The last 13 years were spent as the principal of School 3.

Principal 3 considered instructional leadership to be “facilitating goal setting and goal accomplishments and fitting what you do with your community.” A principal must have the ability to “create shared sets of values in staff.” In order to accomplish this, “You have to have your own beliefs about education and learning in general.” This belief system is the “pivot and anchor for decision-making” in a school and enables the principal to build and communicate a shared vision regarding learning community. “The beliefs give you a position to act from...Day to day decisions go back to the basic belief

system.” He emphasized,

As an administrator, it is important to have a sense of what you can and can't do...to know at what point are your beliefs being transgressed. What is useful? What is not?...When a teacher asks for input, I can say, “OK, how does this decision relate to (specific belief).” We can decide: Is it worth taking a risk?

Principal 3 considered himself to possess “tolerance for ambiguity,” a characteristic of an effective instructional leader, which allows for flexibility. He considered a combination of intolerance for ambiguity and very narrow boundaries as precursors to ineffective leadership.

Another hallmark of effective instructional leadership, according to Principal 3, is the ability to implement vision and mission through comprehensive planning, implementation, and monitoring. He stated, “You can't lead unless you know where you are...During the strategic planning process, I was deliberate in trying to frame the plan around the beliefs. It is important to frame and state people's beliefs.” Thus, Principal 3's instructional leadership was based on:

- a. Focus on student achievement
- b. Community - “You fit your school to the community”
- c. Creation of a learning community.

Principal Perceptions of Process Spelling Curriculum and Curriculum

Implementation. Principal 3 credited the spelling program, Mastery Spelling, in place prior to the Process Spelling adoption, and its similarity to Process Spelling, to School 3's successful integration of Process Spelling. “Process Spelling almost seemed like an extension, except it accelerates the level of word difficulty radically...The format was not

as startling.”

Approximately 25% of the staff was trained in Process Spelling prior to the formal adoption, and the entire staff was in-serviced in August 1999, the year of the formal adoption. The implementation of Process Spelling at School 3 was “pretty universally accepted.” Principal 3 stated that among staff, only one teacher was not fully implementing the program. However, he perceived Process Spelling as being successfully implemented, i.e., by the number of people using it and the increase in scores. He stated that some teachers were combining virtual phonics with Process Spelling.

Principal 3 discussed central office administration expectations for principal leadership in the district. “We’re not explicitly given the charge of leading. It is implicit.” He expressed some concern regarding the adoption of Process Spelling. “In terms of the classic models of innovation/implementation, I would say that it has been pretty haphazard.” According to Principal 3, the basics of CBAM were not followed. There was a lack of coordination between curricular areas. At the school level, “I didn’t feel I needed to take (specific measures for) leadership,” and explained the implementation was “more of a district initiative” referring to district workshops and district materials.

Principal 3 explained that principals were not provided with specific instructions regarding building leadership of Process Spelling implementation. He indicated principals were not included in implementation planning. Discussion from central office did not include suggestions, e.g., “This is what you need to do,” or questions, e.g., “What do you need?” Principal 3 stated Process Spelling was a district initiative and central office “had it handled.” It was “almost like it slipped under my radar.”

Results of Principal 3's Instructional Leadership Assessments. Since 1997, 11 teachers taught at the first, second, and third grade levels. Eleven informed consents were sent and eight teachers agreed to participate. A total of eight primary teachers and the principal responded to the Instructional Leadership Assessment instruments. This represented 72% of the original primary teaching staff.

Visibility. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to principal visibility are provided in Table 27. For each statement, the principal response is provided in parentheses.

Table 27. Frequencies of Responses Regarding Visibility Behaviors of the Principal.

Visibility Belief 1: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis. [Principal 3: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	4	50
Disagree	2	25
Strongly disagree	2	25

Visibility Belief 2: My principal actively participates in staff development activities related to Process Spelling. [Principal 3: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	4	50
Disagree	3	37.5
Strongly disagree	1	12.5

Visibility Belief 3: My principal includes Process Spelling instruction as part of the formal evaluation process. [Principal 3: Agree]

	Frequency	Percent
Strongly agree	1	12.5
Agree	1	12.5
Disagree	4	50
Strongly disagree	1	12.5

Principal 3 indicated he conducted informal observations in classrooms several times each month. With regard to staff development activities, half of the respondents perceived Principal 3 was an active participant in activities related to Process Spelling, while half of the respondents perceived staff development participation by the principal to have occurred once every six months or less.

Principal 3 stated he did not include Process Spelling in formal observations, although he looked for evidence of Process Spelling instruction during informal observations. He indicated the inclusion of Process Spelling as part of formal observations would be discussed with staff members in the near future.

Communicator. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as a communicator are provided in Table 28. For each statement, the principal response is provided.

Table 28. Frequencies of Responses Regarding Communicator Behaviors of the Principal.

Communicator Frequency 1: My principal conveys high expectations for teacher and student performance. [Principal 3: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	7	87.5
At least 1 time every 3 months	1	12.5
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 2: My principal discusses Process Spelling with teachers at faculty meetings. [Principal 3: One time per year or less]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	12.5
At least 1 time every 6 months	4	50
One time per year or less	3	37.5

Communicator Frequency 3: My principal acknowledges or compliments teachers for their efforts or performance with regard to spelling instruction. [Principal 3: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	1	12.5
At least 1 time every 3 months	4	50
At least 1 time every 6 months	1	12.5
One time per year or less	2	25

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [Principal 3: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	3	37.5
At least 1 time every 3 months	4	50
At least 1 time every 6 months	0	0
One time per year or less	1	12.5

Communicator Belief 1: My principal set and expressed his/her expectations for Process Spelling instruction to staff when the program was started. [Principal 3: Agree]

	Frequency	Percent
Strongly agree	1	12.5
Agree	7	87.5
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 2: My principal sets and expresses his/her expectations with regard to Process Spelling instruction to teachers new to my school. [Principal 3: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	6	75
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 3: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month. [Principal 3: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	1	12.5
Disagree	6	75
Strongly disagree	1	12.5

Principal 3 emphasized experience as being helpful in an instructional leadership role and stated, "There are an enormous amount of interpersonal skills and intrapersonal skills required."

Principal 3 considered his instructional leadership impact on student achievement in a "directly indirect" way "by holding up high levels of expectation for student achievement." He stated, "Teachers ask, 'But aren't we a good school?'...I say, 'Yes, but we can improve.'" Survey responses underscored such a climate of high expectations. According to Principal 3, he possessed strong beliefs regarding accountability, and he referred to grants he managed which focus on specific student outcomes. He stated, "I do support the emphasis on goals for student outcomes."

All teachers and the principal agreed that Process Spelling expectations were set and expressed to staff when the program was implemented. Principal 3 and staff also unanimously agreed expectations with regard to Process Spelling instruction for teachers new to the school were set by the principal. While Principal 3 and one teacher perceived expectations were reinforced with all staff at least one time each month, other primary level staff members perceived such reinforcement occurred less frequently.

Survey respondents and Principal 3 acknowledged shared decision making had occurred in the school. Three respondents and Principal 3 perceived such shared decision

making to have occurred at least one time per month, while the remainder of the respondents perceived such shared decision making to have occurred at least one time every three months. Principal 3, discussing his leadership role, referred to “delegated leadership” and the need for a “collective sense of leadership.” He stated, “Staff should ask, ‘Is it really happening? How do we make it happen?’”

Instructional Resource. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as an instructional resource are provided in Table 29. For each statement, the principal response is provided in parentheses.

Table 29. Frequencies of Responses Regarding Instructional Resource Behaviors of the Principal.

Instructional Resource Frequency 1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussions. [Principal 3: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	7	87.5
At least 1 time every 3 months	1	12.5
At least 1 time every 6 months	0	0
One time per year or less	0	0

Instructional Resource Frequency 2: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities. [Principal 3: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	12.5
At least 1 time every 6 months	3	37.5
One time per year or less	4	50

Instructional Resource Frequency 3: My principal uses spelling achievement test results to assess the school's progress in spelling. [Principal 3: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	12.5
At least 1 time every 6 months	4	50
One time per year or less	3	37.5

Instructional Resource Belief 1: Leadership and the direction of the school's mission have been consistent over the last five years. [Principal 3: Strongly agree]

	Frequency	Percent
Strongly agree	1	12.5
Agree	1	12.5
Disagree	3	37.5
Strongly disagree	3	37.5

Principal 3 believed the knowledge of "best practices" in instruction, leadership, and change provide the foundation for effective instructional leadership. Principal 3 knew and shared the latest research findings on teaching and learning with staff through a variety of methods, including copies of journal articles, memos, and discussions at least once per month. A majority of survey respondents agreed that such information was shared with this frequency.

Sharing ideas or information about Process Spelling occurred infrequently. However, an expectation of Principal 3 was that throughout the year's faculty meetings, every staff member would share strategies used to differentiate instruction in any curricular area, or generally, in the classroom, or teach MBI goals.

Survey respondents did not agree as to the consistency of leadership and the direction of the school's mission over the last five years. However, School 3 did have a strategic plan which specifically mapped out the school goals. Principal 3 stated, "We need to narrow the focus of what we're trying to do, and keep out distractions." He

referred to school goals and made the distinction of determining “What we *could* do vs. what we *should* do—goals narrow your focus.” Principal 3 expressed frustration with the amount of content teachers must deliver, and recognized teachers’ stress regarding their workload. When asked what he, as an instructional leader, was doing about this, he replied, “Nothing. I’m adding to the problem. But I don’t think that the opposite is the solution.” He stated his opposition to cuts in content delivery, and emphasized, “Basic skills are operationalized through content areas. If you cut out those areas, you get inculcation of skills without application.”

Resource Provider. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to the principal as a resource provider are provided in Table 30. For each statement, the principal response is provided in parentheses.

Table 30. Frequencies of Responses Regarding Resource Provider Behaviors of the Principal.

Resource Provider Frequency 1: My principal uses the teacher-leader concept at the school site for Process Spelling. [Principal 3: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	3	37.5
At least 1 time every 6 months	0	0
One time per year or less	4	50

Resource Provider Frequency 2: My principal encourages on-going teacher collaboration regarding instruction in all areas. [Principal 3: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	3	37.5
At least 1 time every 3 months	5	62.5
At least 1 time every 6 months	0	0
One time per year or less	0	0

Resource Provider Frequency 3: My principal encourages and provides for action research. [Principal 3: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	12.5
At least 1 time every 6 months	0	0
One time per year or less	7	87.5

The effectiveness of the teacher-leader concept at School 3 was questionable.

Principal 3 described the initial selection of the teacher-leader for Process Spelling as voluntary. He stated, "When something is voluntary, the best leaders aren't always picked...Some teachers who would have been very effective declined to participate."

School 3's teacher-leader, new to the school in 1997, accepted the position voluntarily. At the time, according to Principal 3, "She was not perceived by the staff as a teacher-leader, and she served more as a communication conduit." This was reflected in the survey responses, i.e., three teachers and the principal perceived the teacher-leader concept being used once every three months; four teachers perceived the teacher-leader concept being used once a year or less. He described some teachers as preferring the "egg carton model of schooling" in which teachers work independently.

Other forms of teacher collaboration were encouraged at School 3. Perceptions regarding the amount and frequency of action research conducted by teachers were inconsistent.

Beliefs. Frequencies and percents of teacher responses regarding statements concerning Process Spelling and beliefs relating to instructional leadership behaviors of the principal and their relationship to teacher efficacy are provided in Table 31. For each statement, the principal response is provided.

Table 31. Frequencies of Responses Regarding Belief Statements Regarding Process Spelling and Leadership.

Belief Statement 1: I believe Process Spelling is an effective instructional methodology.
[Principal 3: Strongly agree]

	Frequency	Percent
Strongly agree	5	62.5
Agree	3	37.5
Disagree	0	0
Strongly disagree	0	0

Belief Statement 2: I consider myself effective in the delivery of Process Spelling.
[Principal 3: Agree]

	Frequency	Percent
Strongly agree	5	62.5
Agree	3	37.5
Disagree	0	0
Strongly disagree	0	0

Belief Statement 3: I feel the leadership behaviors of my principal make me a more effective teacher. [Principal 3 (for one's own leadership behaviors): Agree]

	Frequency	Percent
Strongly agree	1	12.5
Agree	3	37.5
Disagree	3	37.5
Strongly disagree	0	0

Survey responses suggested there was strong evidence staff and leadership perceived Process Spelling was an effective instructional methodology and staff and leadership were themselves effective in the delivery of Process Spelling. Four teacher respondents and the principal agreed, one strongly, the principal's instructional leadership made them more effective teachers. Three respondents did not agree that the principal's instructional leadership made them more effective teachers.

School 4

June school enrollments for grades 1-5 for the 1998-99, 1999-00, and 2000-01 school years were 286, 278, and 261, respectively (Bozeman Public Schools, 2001e). Since the 1997-1998 school year, free and reduced lunch percentages have fluctuated within 10 percentage points, with a high of 29% for the 2000-01 school year. The 2000-01 student enrollment was approximately 260. Approximately 2% of the student population was Asian, less than 1% African-American, and 97% White (Bozeman Public Schools, 2001e). Staff consisted of 11 classroom teachers, with five teachers serving grades 1 through 3.

School 4 had a strategic plan in place, which included a mission statement, school parameters to uphold the mission statement, various belief statements related to behavior and teaching and learning, and short-term and long-term goals and strategies. School 4's mission statement, which had been in existence since the spring of 1999, stated,

The School 4 program fosters the joy of learning, honors individual abilities, encourages academic success, promotes social responsibility, and provides opportunities for exploration of our local ecosystem, community and place in the world. We combine our core curriculum with an innovative focus on scientific thinking, creative expression, and integration of cultural studies. (Bozeman Public Schools, 2001i)

Art was a major emphasis throughout the school year and was integrated into many curricular areas. School 4 had single-age, multi-age and, occasionally, cycling classes in which a group of students cycled through the same teacher for two consecutive years. School 4 also served as a model site for the Montana Behavioral Initiative (MBI), an ongoing, school-wide positive discipline plan.

The operation of the school's instructional program was founded on the following parameters:

1. We will accept no new programs or activities without
 - adequate funding
 - participating in the development and evaluation of the program by those affected
 - provision for staff training developed by those affected
 - alignment with our beliefs and mission statements
 - supplies and infrastructure to support them
 - integration with other programs and the district K-5 curriculum
 - assessing student needs.
2. We will honor teaching and learning styles within the framework of the district curriculum.
3. Class sizes will not exceed state limits.
4. We will develop educational programs and support services in response to individual student needs rather than staff availability, willingness or competence.
5. Physical space will be used to maximize student learning.
6. We will not tolerate any action by a student, parent, or staff member that leaves anyone feeling degraded or in danger.
7. We will not employ or retain people who do not implement our mission or beliefs (Bozeman Public Schools, 2000b).

Spelling Assessment Information. Two tests were administered to the Bozeman Public School district primary students in the 1998-99, 1999-00, and 2000-01 school years. The CTBS was administered to third grade students in School 4 during the month of April for these school years. The TWS-3 was administered to first, second, and third grade students in the fall and spring of the 1998-99, 1999-00, and 2000-01 school years.

CTBS Descriptive Statistics. Descriptive statistics for School 4 CTBS results are shown in Table 32. All statistics are based on national percentile test score values.

Table 32. School 4 CTBS Descriptive Statistics.

Grade	Year	N	Mean	Median	SD	Min	Max
3	1998-99	45	53.38	48.00	31.69	4	99
3	1999-00	49	49.92	48.00	31.33	2	99
3	2000-01	43	59.00	66.00	32.62	2	99

CTBS Inferential Statistics. A Kruskal-Wallis test was conducted to evaluate differences in CTBS median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(4, N = 137) = 1.77, p = .413$.

TWS-3 Descriptive Statistics. Descriptive statistics for School 4 TWS-3 results are shown in Table 33. All statistics were based on raw test score values.

Table 33. School 4 TWS-3 Descriptive Statistics.

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
1	1998-99	Fall	44	5.91	5.00	4.18	0	17
1	1999-00	Fall	34	8.18	6.00	6.41	0	25
1	2000-01	Fall	43	5.42	5.00	4.27	0	18
1	1998-99	Spring	42	24.45	26.00	8.65	7	43
1	1999-00	Spring	34	25.47	24.50	9.07	5	44
1	2000-01	Spring	43	20.70	20.00	6.42	7	39
2	1998-99	Fall	50	18.64	18.00	7.64	3	35
2	1999-00	Fall	41	19.39	17.00	7.33	7	39

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
2	2000-01	Fall	36	23.03	21.00	10.75	6	45
2	1998-99	Spring	44	31.93	30.50	11.58	7	57
2	1999-00	Spring	44	30.27	29.00	9.51	6	54
2	2000-01	Spring	33	33.97	31.00	13.30	15	63
3	1998-99	Fall	27	24.11	24.00	7.50	12	39
3	1999-00	Fall	49	33.29	33.00	15.85	6	76
3	2000-01	Fall	43	29.93	30.00	11.45	4	53
3	1998-99	Spring	27	33.22	32.00	10.04	16	56
3	1999-00	Spring	51	42.41	40.00	20.48	13	93
3	2000-01	Spring	43	39.98	41.00	12.72	10	64

TWS-3 Inferential Statistics

Grade 3 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 119) = 8.85, p = .012$. The eta square index of .075 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1998-99 median test score was lower and significantly different than both the 1999-00 and 2000-01 median test scores. The 1999-00 and 2000-01 median test scores were not significantly different.

Grade 3 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 121) = 5.09, p = .078$.

Grade 2 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 127) = 3.86, p = .145$.

Grade 2 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 121) = .78, p = .677$.

Grade 1 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 121) = 4.03, p = .133$.

Grade 1 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 119) = 8.74, p = .013$. The eta square index of .074 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was lower and significantly different than both the 1998-99 and 1999-00 median test scores. The 1998-99 and 1999-00 median test scores were not significantly different.

TWS-3 Pooled Test Scores for Grades 1-3. School 4 pooled TWS-3 results are shown in Table 34. Pooled means are based on raw TWS-3 scores for Grades 1-3. As described in Chapter 3 grade level TWS-3 scores were combined into a pooled test score average for each school to provide a basis for inter-school comparisons.

Table 34. School 4 TWS-3 Pooled Means.

Year	Test Period	Pooled Mean
1998-99	Fall	16.22
1999-00	Fall	20.28
2000-01	Fall	19.46
1998-99	Spring	29.87
1999-00	Spring	32.72
2000-01	Spring	31.55

Principal 4 did not focus to any great extent on spelling scores. While she did review the previous year's scores, no analysis was completed. "I didn't look at them for trends." While some spelling assessment information was shared at the district level with elementary principals, Principal 4 would have preferred that it "filter down with school and grade level specifics."

For clarity, a narrative version of School 4 grade and school level test score patterns are provided below. The narrative includes descriptions of pooled grade level test score patterns and grade specific patterns of significant year-to-year and two-year test score differences.

School level fall TWS-3 scores increased sharply between the 1998-99 and 1999-00 school years (Figure 5) in association with a significant grade 3 test score increase (Appendix H); school level fall TWS-3 scores decreased between the 1999-00 and 2000-01 school years in association with a significant grade 1 test score decrease. The 1998-99 to 1999-00 fall TWS-3 increase for School 4 was the largest average year-to-year fall TWS-3 score change among the six study schools. School level spring TWS-3 scores increased between the 1998-99 and 1999-00 school years although there were no significant grade level test score differences; school level spring TWS-3 scores decreased

between the 1999-00 and 2000-01 school years in association with a significant grade 1 test score decrease. Grade 1 realized a significant test score decrease for the spring test across the three school year period of 1998-99 to 2000-01, and grade 3 realized a significant TWS-3 score increase for both the fall and spring tests across the three school year period of 1998-99 to 2000-01. On average, CTBS scores decreased between 1998-99 and 1999-00 and increased between 1999-00 and 2000-01, however, there were no significant year-to-year or three school year differences in the grade 3 CTBS data for School 4. School 4 had the smallest average student population among the six study schools for the study period.

Principal Profile. Over the last five years, School 4 had three different principals. Principal 4 was hired as School 4's principal in the spring of 2000, and served in this capacity during the 2000-01 school year. This was Principal 4's first year as a principal. Prior to this appointment, she had 8 years teaching experience in grades K-8 Title I math and 5-8 multiage, and had recently completed a Master's Degree in Educational Leadership. Principal 4 believed the three most important instructional leadership attributes of a principal were visibility, being supportive of teachers and being knowledgeable about best practices in education. Principal 4 stated her most important personal instructional leadership attributes were visibility, the encouragement of collaboration among staff members, and the promotion of a positive atmosphere in the school.

Principal Perceptions of Process Spelling Curriculum and Curriculum

Implementation. Principal 4 described Process Spelling as “very effective...when students do the high frequency words, they seem to be getting it into their brains.” She believed its effectiveness was related to the differing modes of learning children possess. However, she cautioned, the curriculum was effective only if teachers were trained and if teachers followed the curriculum. Although 60% of the teachers were trained in Process Spelling prior to the formal adoption in August 1999, Principal 4 stated, “If you’re a new teacher in the district and the program has been going on, there doesn’t seem to be a formal system in place to train them and to make sure they’re ‘up to speed.’” Most recently, the district was bringing grade 4 and 5 teachers up to speed on the program.

Principal 4 stated,

Last year, there was a training for 4th and 5th grade teachers to bring Process Spelling to the intermediate grades. However, it was not clear to 4th and 5th grade teachers if Process Spelling was mandatory.

Principal 4 stated the need for more Process Spelling follow-up and teacher collaboration. Principal 4 cited the effectiveness of the district Reading Specialists in bringing cohesiveness to the K-5 reading program. “We need to do that for spelling,” she said.

According to Principal 4, leadership for Process Spelling should be from both school and district. She suggested a “medium” rating for herself with regards to instructional leadership in Process Spelling due to her first-year principal status. “There were so many things to learn and do,” she said. Principal 4 suggested the district be more forceful in setting expectations, e.g., “This is a mandatory program—you will do Process

Spelling.” She stated that this could also be the principal’s job.

During the 2000-01 school year, however, climate was a focus for Principal 4 in her new role. As an example, she discussed her approach to staff meetings. The previous years’ staff meetings used to be what she described as “gripe sessions.” She expressed the need to keep teachers focused on what was happening in the classrooms during staff meetings, so that time wouldn’t be spent “venting.”

Coming in new and working with some very veteran staff members, e.g., over 25 years of experience, was challenging for Principal 4. Some teachers had the mindset that they would continue to do “what has been working” and were not enthusiastic about the implementation of the spelling program. “My motto was ‘Is this best for kids?’ when we must make decisions.”

Principal 4 believed “data need to drive focus.” Additionally, the school had other priorities. Principal 4 stated, “I don’t think we ever truly looked at spelling. If we would do that as a staff, we’d have better focus. We did science—we had two grants—that’s where our money was, so that is what our focus was.” Indeed, during the 2000-01 school year, School 4 had very specific science objectives but none for spelling.

Results of Principal 4’s Instructional Leadership Assessments. Since 1997, six teachers taught at the first, second, and third grade levels. Six informed consents were sent and five teachers agreed to participate. A total of three primary teachers and the principal responded to the Instructional Leadership Assessment instruments. This represented 50% of the original primary teaching staff.

Visibility. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to principal visibility are provided in Table 35. For each statement, the principal response is provided in parentheses.

Table 35. Frequencies of Responses Regarding Visibility Behaviors of the Principal.

Visibility Belief 1: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis. [Principal 4: Strongly agree]

	Frequency	Percent
Strongly agree	0	0
Agree	1	25
Disagree	1	25
Strongly disagree	2	50

Visibility Belief 2: My principal actively participates in staff development activities related to Process Spelling. [Principal 4: Agree]

	Frequency	Percent
Strongly agree	1	25
Agree	0	0
Disagree	2	50
Strongly disagree	1	25

Visibility Belief 3: My principal includes Process Spelling instruction as part of the formal evaluation process. [Principal 4: Disagree]

	Frequency	Percent
Strongly agree	1	25
Agree	0	0
Disagree	3	75
Strongly disagree	0	0

Principal 4 stated strongly that informal observations were conducted on a weekly basis. Two teacher respondents disagreed the principal participated in staff development activities related to Process Spelling, while the principal stated that she did participate in a workshop which occurred at the district level. The two teachers may not have been aware of this, as they were trained through the district during previous years. Principal 4

did attend training for Process Spelling during her first year as a principal. A second year teacher who had never had training and who didn't implement Process Spelling his first year in the district also attended with her.

Communicator. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to the principal as a communicator are provided in Table 36. For each statement, the principal response is provided in parentheses.

Table 36. Frequencies of Responses Regarding Communicator Behaviors of the Principal.

Communicator Frequency 1: My principal conveys high expectations for teacher and student performance. [Principal 4: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	50
At least 1 time every 3 months	1	25
At least 1 time every 6 months	0	0
One time per year or less	1	25

Communicator Frequency 2: My principal discusses Process Spelling with teachers at faculty meetings. [Principal 4: At least 1 time every 6 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	0	0
At least 1 time every 6 months	1	25
One time per year or less	3	75

Communicator Frequency 3: My principal acknowledges or compliments teachers for their efforts or performance with regards to spelling instruction. [Principal 4: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	25
At least 1 time every 6 months	1	25
One time per year or less	2	50

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [Principal 4: At least 1 time per month]

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [Principal 4: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	50
At least 1 time every 3 months	1	25
At least 1 time every 6 months	1	25
One time per year or less	0	0

Communicator Belief 1: My principal set and expressed his/her expectations for Process Spelling instruction to staff when the program was started. [Principal 4: n/a; Principal 4 was new during the 2000-01 school year]

	Frequency	Percent
Strongly agree	0	0
Agree	1	25
Disagree	3	75
Strongly disagree	0	0

Communicator Belief 2: My principal sets and expresses his/her expectations with regards to Process Spelling instruction to teachers new to my school. [Principal 4: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	0	0
Disagree	3	75
Strongly disagree	1	25

Communicator Belief 3: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month. [Principal 4: Disagree]

	Frequency	Percent
Strongly agree	0	0
Agree	0	0
Disagree	2	50
Strongly disagree	2	50

Staff had differing opinions on the frequency of the principal's conveyance of high expectations for teacher and student performance. Staff also had diverse perceptions regarding the frequency of shared decision-making at their site.

Principal 4 believed strongly in sharing best practices, i.e., research or time for teachers to share with each other. All teacher respondents agreed that Process Spelling

was discussed with teachers at faculty meetings one time per year or less. The principal indicated this occurred at least one time every six months. Process Spelling was not addressed at staff meetings, but in grade level meetings, "teachers were asked how things were going and if it was still working. A big concern that came out during these meetings was that by the 4th grade, students were tired of it."

The three teacher respondents agreed that acknowledgment of their efforts or performance with regard to Process Spelling occurred infrequently. The principal indicated such acknowledgment occurred regularly, i.e., at least once per month. "Every one of our primary (1,2,3) teachers, during the year I was there, was implementing it (Process Spelling) by the book."

Instructional Resource. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as an instructional resource are provided in Table 37. For each statement, the principal response is provided in parentheses.

Table 37. Frequencies of Responses Regarding Instructional Resource Behaviors of the Principal.

Instructional Resource Frequency 1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussions. [Principal 4: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	3	75
At least 1 time every 6 months	0	0
One time per year or less	1	25

Instructional Resource Frequency 2: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities. [Principal 4: One time per year or less]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	0	0
At least 1 time every 6 months	1	25
One time per year or less	3	75

Instructional Resource Frequency 3: My principal uses spelling achievement test results to assess the school's progress in spelling. [Principal 4: One time per year or less]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	25
At least 1 time every 6 months	1	25
One time per year or less	2	50

Instructional Resource Belief 1: Leadership and the direction of the school's mission have been consistent over the last five years. [Principal 4: Strongly disagree]

	Frequency	Percent
Strongly agree	1	25
Agree	0	0
Disagree	2	50
Strongly disagree	1	25

While two teachers indicated research findings were shared with the staff at least one time every three months, one staff member indicated this occurred one time per year or less. The principal indicated this occurred at least one time per month.

The principal and the three staff respondents agreed that during the 2000-01 school year, time was very rarely, if ever, set aside to share ideas on spelling instruction or information regarding Process Spelling activities. Additionally, all respondents agreed Process Spelling was not included as part of the formal evaluation process. Principal 4 suggested one improvement could be to "have teachers compare more notes on spelling,

i.e., more sharing, not only in schools but throughout the district... What are we doing well?"

The principal and one teacher indicated their use of spelling achievement test results to assess the school's progress in spelling occurred once during the year, which related to the publishing of the CTBS assessment data. Two teachers used the assessment information more frequently, based on the TWS-3 testing cycle of pre-test and post-test.

All surveyed agreed the leadership and direction of the school's mission had been inconsistent over the last five years. Principal 4 believed focus to be important in school leadership. "We hit mostly science at staff meetings," she stated, and indicated the instructional leadership focus for the 2000-01 school year was science. She believed in the importance of staying with one thing longer than one staff meeting. "One teacher modeled her expertise with science inquiry on early release day... We analyzed science scores in our school...science lessons were demonstrated and then debriefed with teachers."

Resource Provider. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as a resource provider are provided in Table 38. For each statement, the principal response is provided in parentheses.

Table 38. Frequencies of Responses Regarding Resource Provider Behaviors of the Principal.

Resource Provider Frequency 1: My principal uses the teacher-leader concept at the school site for Process Spelling. [Principal 4: One time per year or less]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	25
At least 1 time every 6 months	0	0
One time per year or less	3	75

Resource Provider Frequency 2: My principal encourages on-going teacher collaboration regarding instruction in all areas. [Principal 4: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	25
At least 1 time every 3 months	2	50
At least 1 time every 6 months	0	0
One time per year or less	1	25

Resource Provider Frequency 3: My principal encourages and provides for action research. [Principal 4: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	25
At least 1 time every 6 months	1	25
One time per year or less	2	50

The teacher-leader concept was not used at the school. The principal and the three teacher respondents all agreed such a professional development strategy was not in practice as it occurred one time or less during the school year. One person was designated a teacher-leader—Mrs. 4. While she made herself available to staff, she did not seek out staff, nor did staff seek her expertise. Principal 4's general impression was that the teacher-leader concept at School 4 was highly underutilized.

“I don't think teacher-leaders were clear about what they were supposed to do...they are the contact if there's any specific questions, but they need specific activities

defined.” Principal 4 was unsure whether the School 4 teacher-leader ever met with any of the other teacher-leaders.

Diverse perceptions were presented with regard to the frequency of administrator encouragement for ongoing teacher collaboration. While the principal perceived this occurred at least once per month, two teachers perceived it occurred approximately once per quarter, and one respondent suggested such encouragement occurred one time or less during the school year.

The presentation and promotion of action research at School 4 was perceived to have occurred infrequently by the teachers, although the principal believed she encouraged participation at least one time per month. “I presented the concept to teachers and gave them the option as a professional development activity. Some did it by choice—in different subject areas.”

Principal 4 referred to time as being the biggest teacher complaint. “We gave time to teachers to observe other teachers.” She also provided release time for teachers so they could collaborate with a science teaching expert.

All three teacher respondents agreed that expectations for Process Spelling instruction were not set and expressed for teachers new to the school. This question was not answered by Principal 4, as she did not hire new certified staff during her year at the school.

Beliefs. Frequencies and percents of teacher responses regarding statements concerning Process Spelling and beliefs relating to instructional leadership behaviors of the principal and their relationship to teacher efficacy are provided in Table 39. For each

statement, the principal response is provided in parentheses.

Table 39. Frequencies of Responses Regarding Belief Statements Regarding Process Spelling and Leadership.

Belief Statement 1: I believe Process Spelling is an effective instructional methodology.
[Principal 4: Strongly agree]

	Frequency	Percent
Strongly agree	1	25
Agree	3	75
Disagree	0	0
Strongly disagree	0	0

Belief Statement 2: I consider myself effective in the delivery of Process Spelling.
[Principal 4: Strongly agree]

	Frequency	Percent
Strongly agree	2	50
Agree	2	50
Disagree	0	0
Strongly disagree	0	0

Belief Statement 3: I feel the leadership behaviors of my principal make me a more effective teacher. [Principal 4 (for one's own leadership behaviors): Disagree]

	Frequency	Percent
Strongly agree	1	25
Agree	2	50
Disagree	1	25
Strongly disagree	0	0

School 5

School 5's reputation in the community was one of high student achievement and high family income. June school enrollments for grades 1-5 for the 1998-99, 1999-00, and 2000-01 school years were 504, 516, and 522, respectively (Bozeman Public Schools, 2001e). The free and reduced lunch percentage for the 2000-01 school year was 15%. The student population was approximately 2% Asian, 2% Hispanic, less than 1% American

Indian, and 96% White (Bozeman Public Schools, 2001e).

School 5 had a mixed staff, with the majority of certified staff members being tenured in the district over 10 years. Staff consisted of 23 classroom teachers with 14 primary classrooms.

School 5's mission statement stated,

We at School 5 are dedicated to providing a safe learning environment that enriches the whole child. We are committed to promoting academic achievement, fostering creative problem solving that inspires respect for others, and developing a sense of dignity and personal responsibility for self and community. (Bozeman Public Schools, 2000c)

Spelling Assessment Information. Two tests were administered to the Bozeman Public School District primary students in the 1998-99, 1999-00, and 2000-01 school years. The CTBS was administered to third grade students in School 5 during the month of April for these school years. The TWS-3 was administered to first, second, and third grade students in the fall and spring of the 1998-99, 1999-00, and 2000-01 school years.

CTBS Descriptive Statistics. Descriptive statistics for School 5 CTBS results are shown in Table 40. All statistics are based on national percentile test score values.

Table 40. School 5 CTBS Descriptive Statistics.

Grade	Year	N	Mean	Median	SD	Min	Max
3	1998-99	81	62.57	66.00	28.13	1	99
3	1999-00	77	60.66	66.00	28.28	6	99
3	2000-01	87	67.64	76.00	27.33	9	99

CTBS Inferential Statistics. A Kruskal-Wallis test was conducted to evaluate differences in CTBS median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(4, N = 245) = 2.55, p = .279$.

TWS-3 Descriptive Statistics. Descriptive statistics for School 5 TWS-3 results are shown in Table 41. All statistics are based on raw test score values.

Table 41. School 5 TWS-3 Descriptive Statistics.

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
1	1998-99	Fall	72	4.81	4.00	4.02	0	17
1	1999-00	Fall	100	5.29	4.00	5.69	0	33
1	2000-01	Fall	83	3.96	2.00	4.97	0	21
1	1998-99	Spring	72	27.21	27.00	9.54	7	54
1	1999-00	Spring	105	20.77	19.00	9.66	1	59
1	2000-01	Spring	80	25.39	25.00	10.00	1	57
2	1998-99	Fall	69	19.07	18.00	8.43	1	42
2	1999-00	Fall	78	23.50	23.00	8.86	7	56
2	2000-01	Fall	109	20.50	19.00	9.88	3	56
2	1998-99	Spring	68	31.06	30.50	11.76	5	59
2	1999-00	Spring	80	45.21	44.50	14.86	16	80
2	2000-01	Spring	109	35.40	34.00	13.63	7	70
3	1998-99	Fall	76	30.03	28.00	12.96	5	80
3	1999-00	Fall	79	31.76	30.00	12.08	6	78
3	2000-01	Fall	84	36.12	36.00	12.84	13	63
3	1998-99	Spring	75	44.29	41.00	12.84	15	84
3	1999-00	Spring	80	48.94	48.00	15.31	9	92
3	2000-01	Spring	84	54.29	55.50	12.45	24	77

TWS-3 Inferential Statistics

Grade 3 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 239) = 10.10, p = .006$. The eta square index of .042 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was greater and significantly different than both the 1998-99 and 1999-00 median test scores. The 1998-99 and 1999-00 median test scores were not significantly different.

Grade 3 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 239) = 22.75, p = .000$. The eta square index of .096 indicates a medium to large effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than the 1998-99 median test score. The 2000-01 median test score was greater and significantly different than both the 1998-99 and 1999-00 median test scores.

Grade 2 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 256) = 10.16, p = .006$. The eta square index of .040 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than both the 1998-99 and 2000-01 median test scores. The 1998-99 and 2000-01 median test scores were not significantly different.

Grade 2 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 257) = 33.20, p = .000$. The eta square index of .130 indicates a large effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up

tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than both the 1998-99 and 2000-01 median test scores. The 1998-99 and 2000-01 median test scores were not significantly different.

Grade 1 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 255) = 7.06, p = .029$. The eta square index of .028 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was lower and significantly different than both the 1998-99 and 1999-00 median test scores. The 1998-99 and 1999-00 median test scores were not significantly different.

Grade 1 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 257) = 23.02, p = .000$. The eta square index of .090 indicates a medium to large effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was lower and significantly different than both the 1998-99 and 2000-01 median test scores. The 1998-99 and 2000-01 median test scores were not significantly different.

TWS-3 Pooled Test Scores for Grades 1-3. School 5 pooled TWS-3 results are shown in Table 42. Pooled means are based on raw TWS-3 scores for grades 1-3. As described in Chapter 3, grade level TWS-3 scores were combined into a pooled test score

average for each school to provide a basis for inter-school comparisons.

Table 42. School 5 TWS-3 Pooled Means.

Year	Test Period	Pooled Mean
1998-99	Fall	17.97
1999-00	Fall	20.18
2000-01	Fall	20.19
1998-99	Spring	34.19
1999-00	Spring	38.31
2000-01	Spring	38.36

Principal 5 believed spelling scores as improved from previous years. She stated, "Our scores have improved. I know they've come up but I haven't really looked at it this year."

She discussed CTBS vs. TWS-3 assessments and score trends. This interest stemmed from her perception of the difference between the two tests and the instructional methodology of Process Spelling, i.e., the CTBS series has students choosing the word that is spelled correctly which is in opposition to Process Spelling. "I don't get too excited about this—they (students) should be able to go back and forth," she stated.

For clarity, a narrative version of School 5 grade and school level test score patterns are provided below. The narrative includes descriptions of pooled grade level test score patterns and grade specific patterns of significant year-to-year and two-year test score differences.

School level fall TWS-3 scores increased between the 1998-99 and 1999-00 school years (Figure 5) in association with a significant grade 2 test score increase (Appendix H); school level fall TWS-3 scores increased slightly between the 1999-00 and 2000-01 school years although at the grade level, there was a significant test score

decrease for grade 1 combined with a significant decrease for grade 2 and a significant increase for grade 3. School level spring TWS-3 scores increased between the 1998-99 and 1999-00 school years although at the grade level, there was a significant test score decrease for grade 1 combined with significant increases for grades 2 and 3; school level spring TWS-3 scores increased slightly between the 1999-00 and 2000-01 school years although at the grade level, there was a significant test score increase for grade 1 combined with a significant decrease for grade 2 and a significant increase for grade 3. Grade 1 realized a significant test score decrease for the fall test across the three school year period of 1998-99 to 2000-01, and grade 3 realized significant TWS-3 score increases for both the fall and spring tests across the three school year period of 1998-99 to 2000-01. On average, CTBS scores decreased between 1998-99 and 1999-00 and increased between 1999-00 and 2000-01; however, there were no significant year-to-year or three school year differences in the grade 3 CTBS data for School 5. School 5 had the largest average student population, the greatest level of test score achievement, and the most number of significant year-to-year TWS-3 score differences among the six study schools for the study period.

Principal Profile. Principal 5 had been a teacher for seven years, and a principal for 22 years. She served as principal of School 5 for 10 years.

She believed “knowledge, vision, and communication” to be important instructional leadership attributes of a principal. She described communication as including “people skills and empathy.” She stated, “You can’t go overboard on the feeling stuff but you have to have it—it is a balance.” The affective domain of

leadership, including caring, empathy, and support, are powerful. She explained that a learning curve exists during a curricular implementation, and that teachers will make mistakes. "You've got to have it all." Teachers agreed. "My principal has been very supportive of the staff's needs while we learned to implement Process Spelling."

Principal 5 was cognizant of the differences in culture and climate among the schools in the district. She was uncomfortable with comparisons made in the community between School 5 and other schools. "We have a lot of families who request to come here," she stated. While SES played a role in many of these requests, Principal 5 credited her staff, which she described as "outstanding." She stated, "School 5 teachers are constantly talking about instruction."

Despite the school's reputation of serving high income families, Principal 5 emphasized the school as having a significant percentage of children who qualify for Title I services. "When our Title I position was cut, they (School 5 teachers) developed their own program... We need to make things meaningful for staff. We try to get our own money for things. We don't want to wait around."

Principal Perceptions of Process Spelling Curriculum and Curriculum

Implementation. Principal 5 described the Process Spelling curriculum as "wonderful." When she was introduced to the program, she thought, "A lot of it made sense to me personally... When I first went to the in-services, I kept thinking (about the developers of the curriculum), 'What a powerful team—a 1st grade teacher and a school psychologist.'"

She found Process Spelling to be compatible with brain research. "For years, we had kidded ourselves about developmental spelling. We kept saying (when a student

continued to have difficulty), 'It will come.'" Principal 5 stated, "It is not coming, you need to do it in a different way." For Principal 5 and her school, Process Spelling came at a time when they were ready for the concepts it promotes.

The entire staff was in-serviced in Process Spelling before the formal adoption and mandatory District training in August 1999. In the early stages of implementation, "We encouraged people for a long time to do it by the book... You can't make changes unless you know it in the first place." Now, according to Principal 5, "Most of the teachers here are enthusiastic—they do little twists on it, e.g., they'll give a monthly test or will adapt something one way or another—particularly in the primary grades." She stated, "The upper grades use it with some pretty good consistency."

Principal 5 portrayed the "mindset" at School 5 as "very enthusiastic" and credited that quality as a reason the Process Spelling pilot program initiated by the district was successful at School 5. Teachers credited "enthusiasm and support of program" by the principal for the program's success. Principal 5 described how two of her primary teachers really became "fired up" when Process Spelling was initially discussed at the district level. Principal 5 would ask for volunteers to "go over to another school and do a program." These two teachers would volunteer, and "gained many skills along the way." One was no longer at the school, but the other teacher became the teacher-leader for School 5.

Principal 5 was committed to Process Spelling and had provided opportunity and training for new and seasoned teachers. She also provided opportunities for teacher collaboration. She stated, "Last year, teachers from Billings (Montana) visited our school

to observe Process Spelling in action. These visitations allow us to clarify our teaching techniques as well as the strengths and weaknesses of the program.”

Principal 5 described the district nature of school leadership as site-based. She recalled, “When Process Spelling first started, central office asked for schools to pilot it...Teachers were given a choice/change—we (School 5) had a lot of people who jumped on board.”

With regard to central office leadership, Principal 5’s perception was that “sometimes, central office gets ahead of itself and perhaps doesn’t communicate as effectively as it could...some people thought we had a program before it was really decided.” However, Principal 5 handled the implementation of Process Spelling “the same as I would as with everything else.” She recounted, “What we were doing with spelling wasn’t working, and I have a personal interest in communication arts...It made sense to move forward.” She described initial staff participation in the district’s official Process Spelling adoption as being “like a runaway train—our teachers were already on board.”

Results of Principal 5’s Instructional Leadership Assessments. Since 1997, 15 teachers taught at the first, second, and third grade levels. Fifteen informed consents were sent and 13 teachers agreed to participate. A total of 13 primary teachers and the principal responded to the Instructional Leadership Assessment instruments. This represented 87% of the original primary teaching staff.

Visibility. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to

principal visibility are provided in Table 43. For each statement, the principal response is provided in parentheses.

Table 43. Frequencies of Responses Regarding Visibility Behaviors of the Principal.

Visibility Belief 1: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis. [Principal 5: between Agree and Disagree]

	Frequency	Percent
Strongly agree	1	7.1
Agree	2	14.3
Disagree	5	35.7
Strongly disagree	6	42.9

Visibility Belief 2: My principal actively participates in staff development activities related to Process Spelling. [Principal 5: Strongly agree]

	Frequency	Percent
Strongly agree	6	42.9
Agree	8	57.1
Disagree	0	0
Strongly disagree	0	0

Visibility Belief 3: My principal includes Process Spelling instruction as part of the formal evaluation process. [Principal 5: Disagree]

	Frequency	Percent
Strongly agree	5	35.7
Agree	7	50
Disagree	1	7.1
Strongly disagree	1	7.1

Survey responses did not support a high frequency of informal classroom observations. However, all 13 survey respondents agreed, some strongly, in Principal 5's participation in staff development activities related to Process Spelling. Principal 5 attended all the trainings for Process Spelling. "If I'm not there, how can I support the teachers and how can I know the expectations?" she asked. Additionally, there was strong

survey evidence indicating Process Spelling instruction was part of the formal evaluation process.

Communicator. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to the principal as a communicator are provided in Table 44. For each statement, the principal response is provided in parentheses.

Table 44. Frequencies of Responses Regarding Communicator Behaviors of the Principal.

Communicator Frequency 1: My principal conveys high expectations for teacher and student performance. [Principal 5: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	13	92.9
At least 1 time every 3 months	1	7.1
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 2: My principal discusses Process Spelling with teachers at faculty meetings. [Principal 5: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	9	64.3
At least 1 time every 6 months	4	28.6
One time per year or less	1	7.1

Communicator Frequency 3: My principal acknowledges or compliments teachers for their efforts or performance with regards to spelling instruction. [Principal 5: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	4	28.6
At least 1 time every 3 months	7	50
At least 1 time every 6 months	2	14.3
One time per year or less	1	7.1

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [Principal 5: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	10	71.4
At least 1 time every 3 months	2	14.3
At least 1 time every 6 months	2	14.3
One time per year or less	0	0

Communicator Belief 1: My principal set and expressed his/her expectations for Process Spelling instruction to staff when the program was started. [Principal 5: Strongly agree]

	Frequency	Percent
Strongly agree	8	57.1
Agree	5	35.7
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 2: My principal sets and expresses his/her expectations with regards to Process Spelling instruction to teachers new to my school. [Principal 5: Strongly agree]

	Frequency	Percent
Strongly agree	7	50
Agree	7	50
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 3: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month. [Principal 5: agree]

	Frequency	Percent
Strongly agree	0	0
Agree	5	35.7
Disagree	8	57.1
Strongly disagree	1	7.1

An overwhelming majority of survey respondents, as well as Principal 5, perceived the conveyance of frequent, i.e., at least monthly, high expectations for teacher and student performance. A majority of survey respondents, including Principal 5, noted Process Spelling was discussed at faculty meetings at least once every three months.

While four respondents perceived monthly administrative acknowledgment for their efforts and performance with regard to spelling instruction, six respondents perceived such acknowledgment occurred at least once every three months, and three teachers perceived such acknowledgment occurred less frequently. There was, however, strong survey evidence to support regular, frequent involvement by teachers in decision making for school decisions.

Strong evidence also existed regarding the communication of instructional expectations related to Process Spelling. Principal 5 set and expressed such expectations to teachers new to the school at least one time every three months. Expectations for veteran staff occurred less frequently, but evidence suggested there was some regularity to such reinforcement. A staff member emphasized Principal 5's "commitment to the program; belief in the quality of the program if done properly; and the expectation that staff will put full effort into their teaching when using program." Six other respondents made similar comments.

Instructional Resource. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as an instructional resource are provided in Table 45. For each statement, the principal response is provided in parentheses.

Table 45. Frequencies of Responses Regarding Instructional Resource Behaviors of the Principal.

Instructional Resource Frequency 1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussions. [Principal 5: between At least 1 time per month and At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	8	57.1
At least 1 time every 3 months	6	42.9
At least 1 time every 6 months	0	0
One time per year or less	0	0

Instructional Resource Frequency 2: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities. [Principal 5: between At least 1 time per month and At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	7	50
At least 1 time every 6 months	7	50
One time per year or less	0	0

Instructional Resource Frequency 3: My principal uses spelling achievement test results to assess the school's progress in spelling. [Principal 5: At least 1 time every 6 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	2	14.3
At least 1 time every 6 months	7	50
One time per year or less	5	35.7

Instructional Resource Belief 1: Leadership and the direction of the school's mission have been consistent over the last five years. [Principal 5: Strongly agree]

	Frequency	Percent
Strongly agree	9	64.3
Agree	5	35.7
Disagree	0	0
Strongly disagree	0	0

A majority of staff respondents perceived research findings related to spelling, writing and reading were shared on a frequency of at least once per month. The remainder

of the survey respondents perceived such information was shared at least one time every three months. One staff member stated, "She models interest in research at staff training sessions." Additionally, there was strong evidence to support sharing of ideas related to Process Spelling occurred at faculty meetings at least once every three to six months. Principal 5 varied the format of staff meetings. "Sometimes I just take time to tell staff something—I'll take time to share information with staff," she stated.

Respondent perceptions regarding the frequency with which spelling achievement test results were reviewed to assess the school's progress in spelling were mixed, with a majority of respondents perceiving such review to have taken place at least once every six months. One staff member emphasized Principal 5's use of "encouragement, enthusiasm, data, and support."

There was strong evidence to support consistency in leadership and the direction of the school's mission over the last five years. All survey respondents either strongly agreed or agreed to such consistency.

Resource Provider. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as a resource provider are provided in Table 46. For each statement, the principal response is provided in parentheses.

Table 46: Frequencies of Responses Regarding Resource Provider Behaviors of the Principal.

Resource Provider Frequency 1: My principal uses the teacher-leader concept at the school site for Process Spelling. [Principal 5: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	8	57.1
At least 1 time every 3 months	3	21.4
At least 1 time every 6 months	3	21.4
One time per year or less	0	0

Resource Provider Frequency 2: My principal encourages on-going teacher collaboration regarding instruction in all areas. [Principal 5: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	11	78.6
At least 1 time every 3 months	3	21.4
At least 1 time every 6 months	0	0
One time per year or less	0	0

Resource Provider Frequency 3: My principal encourages and provides for action research. [Principal 5: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	7.1
At least 1 time every 3 months	4	28.6
At least 1 time every 6 months	2	14.3
One time per year or less	7	50

The teacher-leader concept seemed to be used with regularity at School 5. Seven respondents indicated teacher-leader assistance at least once per month. Three respondents and Principal 5 indicated such assistance to have occurred at least once every three months, while three respondents indicated such assistance to have occurred at least once every six months. A respondent stated, "Our spelling facilitator/mentor is most helpful in offering help, suggestions, observations, and/or modeling."

There was strong evidence to suggest Principal 5's encouragement of on-going collaboration. A majority of respondents indicated such collaboration occurred at least

once each month, while three teachers indicated collaboration occurred at least once every three months. Principal 5 described how staff members assisted each other and constantly shared information. It was typical, she stated, to observe teachers talking in the hallways or by the mailboxes about things they are doing in their classrooms, asking each other "What did you do? What does this mean?"

Staff comments included:

- 1) She frequently has updates/mini-presentations at staff meetings. We are encouraged to observe in other classrooms while she covers our class or arranges someone else to."

- 2) The principal arranged to have leader teachers visit, observe, and coach others.

Her concern for good instruction was conveyed this way."

Principal 5 stated she always wishes for more time to do more things—she wishes this for herself and for her staff. "I love learning, I'm very inquisitive, I like to discuss things." She described how one teacher attended the "We Teach All" workshop and shared her experience with her. This teacher and Principal 5 then attended the first day of the PIR day conference together and will eventually share what they learned with staff.

There was no evidence to support the occurrence of frequent action research at School 5. While Principal 5 perceived action research had occurred at least once each month, survey respondents' perceptions were mixed.

Beliefs. Frequencies and percents of teacher responses regarding statements concerning Process Spelling and beliefs relating to instructional leadership behaviors of the principal and their relationship to teacher efficacy are provided in Table 47. For each

statement, the principal response is provided in parentheses.

Table 47. Frequencies of Responses Regarding Belief Statements Regarding Process Spelling and Leadership.

Belief Statement 1: I believe Process Spelling is an effective instructional methodology.
[Principal 5: Strongly agree]

	Frequency	Percent
Strongly agree	11	78.6
Agree	3	21.4
Disagree	0	0
Strongly disagree	0	0

Belief Statement 2: I consider myself effective in the delivery of Process Spelling.
[Principal 5: Strongly agree]

	Frequency	Percent
Strongly agree	6	42.9
Agree	8	57.1
Disagree	0	0
Strongly disagree	0	0

Belief Statement 3: I feel the leadership behaviors of my principal make me a more effective teacher. [Principal 5 (for one's own leadership behaviors): Agree]

	Frequency	Percent
Strongly agree	8	57.1
Agree	4	28.6
Disagree	2	14.3
Strongly disagree	0	0

There was strong evidence to suggest primary teachers and Principal 5 believed Process Spelling to be an effective instructional methodology and that both teachers and Principal 5 considered themselves to be effective in the delivery of Process Spelling. Staff comments included:

- "Our principal strongly supports Process Spelling—she has observed what a difference it makes in learning skills and with retention of skills learned."

- “Our principal is extremely committed to Process Spelling. She knows how it needs to be taught and makes every effort possible to assist those who need extra support.”

A majority of teacher respondents strongly agreed principal leadership at School 5 made them more effective teachers; three teachers and Principal 5 agreed principal leadership made them more effective teachers, and two disagreed. Principal 5 stated,

I spend a lot of time here. I want to be happy, and I want that for everyone else. We have a very stable staff; we just grow ...Hiring is the most important job I do. If I do it right, things go well. I do hire collaboratively—always a teacher team (although not always a parent team). I hire on personality, skills and knowledge, presence, and the ability of the teacher to build a sense of community in the classroom...A principal can train instruction and methods, but can't change someone's personality.

School 6

June school enrollments for grades 1-5 for the 1998-99, 1999-00, and 2000-01 school years were 296, 276, and 251, respectively (Bozeman Public Schools Quarterly Reports, 1998-2001). Free and reduced lunch percentages were highest at School 6, with a 28% rate for the 2000-01 school year. The student population consisted of approximately 2% American Indian, 1% Asian, 1% Hispanic, and 94% White.

School 6 had a mixed staff, with the majority of certified staff members tenured in the district more than 10 years. Staff consisted of 12 classroom teachers, with six teachers serving grades 1 through 3.

School 6's mission statement, which had been in existence since 1997, stated, “Our mission is to create a community of responsible, skilled, compassionate citizens” (S.

Richter, personal communication, October 13, 2001).

Principal 6 stated,

The goal (of education) is to see growth and that's the goal with the staff... The tricky thing is to maintain that balance, despite comments from newspapers, in district, etc. It can be very disheartening. Most don't understand the challenges the student population at School 6 face.

Spelling Assessment Information. Two tests were administered to the Bozeman Public School District primary students in the 1998-99, 1999-00, and 2000-01 school years. The CTBS was administered to third grade students in School 6 during the month of April for these school years. The TWS-3 was administered to first, second, and third grade students in the fall and spring of the 1998-99, 1999-00, and 2000-01 school years.

CTBS Descriptive Statistics. Descriptive statistics for School 6 CTBS results are shown in Table 48. All statistics are based on national percentile test score values.

Table 48. School 6 CTBS Descriptive Statistics.

Grade	Year	N	Mean	Median	SD	Min	Max
3	1998-99	57	47.81	40.00	30.43	1	99
3	1999-00	45	51.20	56.00	29.56	4	99
3	2000-01	37	47.68	48.00	27.68	1	99

CTBS Inferential Statistics. A Kruskal-Wallis test was conducted to evaluate differences in CTBS median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(4, N = 139) = .442, p = .802$.

TWS-3 Descriptive Statistics. Descriptive statistics for School 6 TWS-3 results are shown in Table 49. All statistics are based on raw test score values.

Table 49. School 6 TWS-3 Descriptive Statistics.

Grade	Year	Test Period	N	Mean	Median	SD	Min	Max
1	1998-99	Fall	18	5.11	4.00	4.20	1	12
1	1999-00	Fall	42	4.31	2.00	5.36	0	27
1	2000-01	Fall	27	4.74	4.00	4.18	0	13
1	1998-99	Spring	20	15.25	16.00	4.64	8	24
1	1999-00	Spring	44	23.80	23.00	8.83	7	50
1	2000-01	Spring	29	22.31	23.00	8.34	2	37
2	1998-99	Fall	39	18.03	17.00	6.31	4	31
2	1999-00	Fall	38	18.92	18.00	10.42	3	56
2	2000-01	Fall	39	22.74	22.00	9.57	8	49
2	1998-99	Spring	40	31.10	30.50	11.42	6	53
2	1999-00	Spring	41	38.00	36.00	11.56	21	75
2	2000-01	Spring	44	32.23	33.50	13.75	8	70
3	1998-99	Fall	53	26.79	25.00	9.94	7	50
3	1999-00	Fall	40	32.03	31.50	10.41	0	54
3	2000-01	Fall	40	28.78	27.50	12.80	6	75
3	1998-99	Spring	52	39.02	38.00	11.23	15	60
3	1999-00	Spring	42	42.14	41.50	12.18	16	62
3	2000-01	Spring	33	42.12	38.00	13.35	12	82

TWS-3 Inferential Statistics

Grade 3 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 133) = 7.37, p = .025$. The eta square index of .056 indicates a medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1999-00 median test score was greater and significantly different than the 1998-99 median test score. There were not any significant differences between median test scores for 1999-00 and 2000-01 or 1998-99 and 2000-01.

Grade 3 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test

was nonsignificant, $\chi^2(2, N = 127) = 1.86, p = .394$.

Grade 2 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 116) = 6.04, p = .049$. The eta square index of .053 indicates a small to medium effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 2000-01 median test score was greater and significantly different than both the 1998-99 and 1999-00 median test scores. There was not any significant difference between median test scores for 1998-99 and 1999-00.

Grade 2 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 125) = 5.56, p = .062$.

Grade 1 Fall TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was nonsignificant, $\chi^2(2, N = 87) = 1.50, p = .472$.

Grade 1 Spring TWS-3. A Kruskal-Wallis test was conducted to evaluate differences in TWS-3 median test scores during 1998-99, 1999-00, and 2000-01. The test was significant, $\chi^2(2, N = 93) = 16.22, p = .000$. The eta square index of .176 indicates a large effect size. Follow-up tests were conducted using the Mann-Whitney U test to examine test score differences between all pairs of test years. The results of the follow-up tests are reported in Appendix H. The 1998-99 median test score was lower and significantly different than both the 1999-00 and 2000-01 median test scores. There was

not any significant difference between median test scores for 1999-00 and 2000-01.

TWS-3 Pooled Test Scores for Grades 1-3. School 6 pooled test results are shown in Table 50. Pooled means are based on raw TWS-3 scores for grades 1-3. As described in Chapter 3, grade level TWS-3 scores were combined into a pooled test score average for each school to provide a basis for inter-school comparisons.

Table 50. School 6 TWS-3 Pooled Means.

Year	Test Period	Pooled Mean
1998-99	Fall	16.64
1999-00	Fall	18.42
2000-01	Fall	18.75
1998-99	Spring	28.46
1999-00	Spring	34.65
2000-01	Spring	32.22

Principal 6 stated that there was a definite positive trend in recent Process Spelling assessment scores. "I'm convinced that it's Process Spelling...It's a powerful way to teach...I would like to incorporate it into other curricular areas."

For clarity, a narrative version of School 6 grade and school level test score patterns are provided below. The narrative includes descriptions of pooled grade level test score patterns and grade specific patterns of significant year-to-year and two-year test score differences.

School level fall TWS-3 scores increased between the 1998-99 and 1999-00 school years in association with a significant grade 3 test score increase (Figure 5); school level fall TWS-3 scores increased slightly between the 1999-00 and 2000-01 school years in association with a significant grade 2 test score increase (Appendix H). School level spring TWS-3 scores increased sharply between the 1998-99 and 1999-00 school years in

association with significant grade 1 and grade 2 test score increases; school level spring TWS-3 scores decreased between the 1999-00 and 2000-01 school years although there were no significant grade level test score differences. School 6 had the largest average year-to-year spring TWS-3 score change among the six study schools and was the only school with no significant year-to-year or three school year period TWS-3 score declines. On average, CTBS scores increased between 1998-99 and 1999-00 and decreased between 1999-00 and 2000-01; however, there were no significant year-to-year or 3 school year differences in the grade 3 CTBS data for School 6.

Principal Profile. Principal 6 spent 12 years as a teacher, and 18 years as a principal. All 18 years were as principal at School 6. Principal 6 believed in three primary practices of effective principals:

1. Development of school mission with a focus on students' academic and emotional welfare,
2. Development of positive school climate, and
3. Knowledge of curriculum.

Principal 6's assessment of herself as an effective instructional leader focused on three characteristics:

1. Ability to work with staff to develop a vision for the school; involve staff in implementation of vision; maintain focus on vision; develop organizational systems which include implementation and assessment,
2. Empowerment of staff, and

3. Ability to create a warm, caring school climate where teachers work collaboratively to benefit students.

Principal 6 expressed a particular interest in curriculum, and stated, "I'm most interested in Language Arts—the process of learning to read is so complex."

Principal Perceptions of Process Spelling Curriculum and Curriculum

Implementation. Principal 6 perceived the Process Spelling curriculum to be very effective. She stated, "The more research I've done on the brain, the more it ties in with effective teaching and learning."

At School 6, Process Spelling implementation was approached in the same way other curricular implementations had been approached. According to Principal 6, "We hit it hard." Seventy-five percent of teachers in the building had been trained in Process Spelling before the formal adoption in August 1999. In the first year of implementation, Principal 6 stated Process Spelling was discussed once a month at staff meetings. The focus was on grades 1-3 for the first two or three years of the program. Principal 6 arranged for teachers to visit other classrooms and other schools. Last year, the second year of the implementation, Principal 6 "folded in new teachers." An effort was made to network new teachers with School 6's teacher-leader. Principal 6 observed lessons using Process Spelling, and had teachers practice Process Spelling with staff.

Principal 6 believed implementation had worked well. "In grades 1-3, it's solid," she emphasized. Principal 6 stated, "All teachers in grades 1-3 are implementing process Spelling 'by the book.'" Following the curriculum exactly as written was important to Principal 6. She emphasized, "We had talks about it...I said that we can't tell if it's

working if we're not following it... They (staff) agreed. I had our teacher-leader talk about it a lot."

Results of Principal 6's Instructional Leadership Assessments. Since 1997, six teachers taught at the first, second, and third grade levels. Six informed consents were sent and five teachers agreed to participate. A total of two primary teachers and the principal responded to the Instructional Leadership Assessment instruments. This represented 33% of the original primary teaching staff.

Visibility. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to principal visibility are provided in Table 51. For each statement, the principal response is provided in parentheses.

Table 51. Frequencies of Responses Regarding Visibility Behaviors of the Principal.

Visibility Belief 1: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis. [Principal 6: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	2	100
Disagree	0	0
Strongly disagree	0	0

Visibility Belief 2: My principal actively participates in staff development activities related to Process Spelling. [Principal 6: Strongly agree]

	Frequency	Percent
Strongly agree	1	50
Agree	1	50
Disagree	0	0
Strongly disagree	0	0

Visibility Belief 3: My principal includes Process Spelling instruction as part of the formal evaluation process. [Principal 6: Agree]

	Frequency	Percent
Strongly agree	0	0
Agree	2	100
Disagree	0	0
Strongly disagree	0	0

Survey evidence supported teachers' perceptions of informal principal observations occurred once every three months. Process Spelling was not perceived to be a major part of formal evaluation. However, one staff member stated, "She took opportunities to observe teachers when we started Process Spelling."

However, Principal 6 spent much time in classrooms. She stated, "I read in classrooms on a regular basis, and focus more in the primary. Teachers and students see that I feel it's (reading) important." In addition, Principal 6 visited classrooms to assist teachers. She stated, "I don't teach classes like I used to. I've gotten away from that. What I'll do more is co-teach or assist in some way. I don't plan and teach lessons the way that I used to; what I do is more of a team effort." Survey evidence also supported Principal 6's involvement in staff development activities related to Process Spelling.

Communicator. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities which related to the principal as a communicator are provided in Table 52. For each statement, the principal response is provided in parentheses.

Table 52. Frequencies of Responses Regarding Communicator Behaviors of the Principal.

Communicator Frequency 1: My principal conveys high expectations for teacher and student performance. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	100
At least 1 time every 3 months	0	0
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 2: My principal discusses Process Spelling with teachers at faculty meetings. [Principal 6: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	50
At least 1 time every 6 months	1	50
One time per year or less	0	0

Communicator Frequency 3: My principal acknowledges or compliments teachers for their efforts or performance with regards to spelling instruction. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	50
At least 1 time every 3 months	1	50
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Frequency 4: My principal actively involves teachers in decision making for school decisions. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	100
At least 1 time every 3 months	0	0
At least 1 time every 6 months	0	0
One time per year or less	0	0

Communicator Belief 1: My principal set and expressed his/her expectations for Process Spelling instruction to staff when the program was started. [Principal 6: Strongly agree]

	Frequency	Percent
Strongly agree	1	50
Agree	1	50
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 2: My principal sets and expresses his/her expectations with regards to Process Spelling instruction to teachers new to my school. [Principal 6: Strongly agree]

	Frequency	Percent
Strongly agree	1	50
Agree	1	50
Disagree	0	0
Strongly disagree	0	0

Communicator Belief 3: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month. [Principal 6: Disagree]

	Frequency	Percent
Strongly agree	0	0
Agree	0	0
Disagree	2	100
Strongly disagree	0	0

Survey respondents perceived Principal 6 to have conveyed high expectations for teacher and student performance. Principal 6 reminded staff, "Everyone can always improve, but we need to celebrate what we do." Staff also acknowledged Principal 6's effort to compliment and recognize teachers for their efforts regarding Process Spelling. Principal 6 stated, "It helps to have a principal who cares."

Principal 6 emphasized the learning process that occurs with teachers in their instructional roles. She felt it was important to create a culture in which people feel involved, and also feel comfortable making mistakes... "Staff appreciates so much being able to make mistakes and not be hit over the head with them." She paraphrased a

favorite quote, "If you can't make mistakes, you can't make anything," and recalled,

One time, I shared a big personal mistake at a staff meeting, and then described how I was going to "clean it up." After the meeting, a teacher came up to me, thanked me for sharing, and admitted that she worried about making mistakes. I replied, "You never had to worry." The teacher responded, "I just needed to hear it from you."

Instructional Resource. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as an instructional resource are provided in Table 53.

For each statement, the principal response is provided in parentheses.

Table 53. Frequencies of Responses Regarding Instructional Resource Behaviors of the Principal.

Instructional Resource Frequency 1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussions. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	2	100
At least 1 time every 3 months	0	0
At least 1 time every 6 months	0	0
One time per year or less	0	0

Instructional Resource Frequency 2: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities. [Principal 6: At least 1 time every 3 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	50
At least 1 time every 6 months	1	50
One time per year or less	0	0

Instructional Resource Frequency 3: My principal uses spelling achievement test results to assess the school's progress in spelling. [Principal 6: At least 1 time every 6 months]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	50
At least 1 time every 6 months	1	50
One time per year or less	0	0

Instructional Resource Belief 1: Leadership and the direction of the school's mission have been consistent over the last five years. [Principal 6: Strongly agree]

	Frequency	Percent
Strongly agree	1	50
Agree	1	50
Disagree	0	0
Strongly disagree	0	0

Survey evidence suggested a school-wide interest in current research related to best practices in spelling, writing and reading. Principal 6 stated, "I research myself and read myself, so I can remain current." Such knowledge was shared with staff members through discussions, journal article copies, memos and books. Research was also shared at faculty meetings. Principal 6 recalled, "The year before last—we discussed brain research for ½ hour at every other staff meeting. Brain research 'ties in beautifully with Process Spelling.'"

Principal 6 spent time discussing School 6's staff meetings, in general. "We have two staff meetings a month (1st and 3rd Wednesdays)...75% of them are devoted to in-service, 15% to singing, morale building." A typical question she asked during staff meetings was, "Does anyone have something wonderful to share that's happened with kids...with you?" In addition, staff members had an opportunity to meet the second Wednesday of each month as goal-groups. The fourth Wednesday of each month was a literacy study group. Attention of the study was the group reading On Common

Ground—members shared and discussed implications to instruction.

Strong survey evidence supported consistent leadership in vision and mission for the school. She stated,

I periodically share my vision because of new staff members...I did that (shared) and then asked other people to share theirs...I realized a vision is worth nothing if I couldn't realize it....And that's my job, to ask "Where are we?" "What do we need to do?"

Principal 6 discussed the importance of the Leadership Team in the goal-setting and goal achievement process:

We have our goals for the year. The Leadership Team paired up—each is responsible for one of the goals. It is an eight-member Leadership team. There are five goals, which were folded into four goals. Each of the members assume leadership for one of these goals. Then, staff members sign up to work on one of the goals. I don't take an active role. At one point, I tried chairing one of the committees, but didn't find that as successful as when I step back and cheerlead.

Resource Provider. Frequencies and percents of teacher responses regarding statements concerning principal instructional leadership behaviors and activities relating to the principal as a resource provider are provided in Table 54. For each statement, the principal response is provided in parentheses.

Table 54. Frequencies of Responses Regarding Resource Provider Behaviors of the Principal.

Resource Provider Frequency 1: My principal uses the teacher-leader concept at the school site for Process Spelling. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	50
At least 1 time every 6 months	1	50
One time per year or less	0	0

Resource Provider Frequency 2: My principal encourages on-going teacher collaboration regarding instruction in all areas. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	1	50
At least 1 time every 3 months	1	50
At least 1 time every 6 months	0	0
One time per year or less	0	0

Resource Provider Frequency 3: My principal encourages and provides for action research. [Principal 6: At least 1 time per month]

	Frequency	Percent
At least 1 time per month	0	0
At least 1 time every 3 months	1	50
At least 1 time every 6 months	1	50
One time per year or less	0	0

Impressions of the frequency of use of the teacher-leader concept were mixed.

Principal 6 perceived the use of the teacher-leader to be occurring on a monthly basis, but the two other respondents perceived the teacher-leader to be used one time every three to six months. Principal 6 described the teacher-leader concept as voluntary. She described how she recruited the School 6 teacher-leader. "I went to her (Teacher 6) and asked her. She is a leader in our school, and her personality, relationships with the staff, and her knowledge of instructional practices in Process Spelling make her very effective."

On-going teacher collaboration was important to Principal 6. She and one respondent perceived teacher collaboration occurred on a monthly basis; the other survey respondent perceived collaboration occurred less frequently, i.e., once every three months. Principal 6 stated,

There's lots of working together—they (staff members) help each other; they share... Several years ago I changed my hiring practices. I always looked for the best teacher I could find, but now I make sure I still look for the best teacher I can find, but also one who will work well as a team member... We've built a culture about working together... We have built a really strong collegial team—people feel

comfortable coming to me and saying, "This isn't working," or "We need to do this," or "Can we do this?"

Principal 6 tried to provide her staff with the resources needed for effective instruction. She stated, "I send staff members out to learn more—observations, workshops, etc. They come back and share with staff. They talk about what they're doing...there is lots of sharing that is done." One staff member stated, "She has made it possible for us to have materials needed for peer coaching."

Beliefs. Frequencies and percents of teacher responses regarding statements concerning Process Spelling and beliefs relating to instructional leadership behaviors of the principal and their relationship to teacher efficacy are provided in Table 55. For each statement, the principal response is provided in parentheses.

Table 55. Frequencies of Responses Regarding Belief Statements Regarding Process Spelling and Leadership.

Belief Statement 1: I believe Process Spelling is an effective instructional methodology.
[Principal 6: Strongly agree]

	Frequency	Percent
Strongly agree	2	100
Agree	0	0
Disagree	0	0
Strongly disagree	0	0

Belief Statement 2: I consider myself effective in the delivery of Process Spelling.
[Principal 6: Agree]

	Frequency	Percent
Strongly agree	1	50
Agree	1	50
Disagree	0	0
Strongly disagree	0	0

Belief Statement 3: I feel the leadership behaviors of my principal make me a more effective teacher. [Principal 6 (for one's own leadership behaviors): [Principal 6: Strongly agree]

	Frequency	Percent
Strongly agree	2	50
Agree	0	0
Disagree	0	0
Strongly disagree	0	0

Principal 6 believed Process Spelling was an effective instructional methodology, considered herself effective in the delivery of Process Spelling, and believed her leadership behaviors made the School 6 teachers more effective. Survey respondents agreed. Principal 6 believed her leadership affected student achievement “directly and indirectly.” She stated, “We have a reading program with kids reading at their own level. That’s differentiated instruction, and that’s where it needs to be. When I began to do research in early literacy, that is where it began to emerge.”

Instructional Leadership School Comparisons

Survey results, indicated in the School Profile section above, were organized into tables based on different categories of instructional leadership behavior frequencies and beliefs. These tables present descriptive statistics for each of the six schools allowing for inter- and intra-school comparisons of instructional leadership attributes.

Table 56. Comparison of Principal Instructional Resource Behavior Frequency Means.

School		IRQ1	IRQ4	IRQ9
1	Mean	3.17	2.57	3.14
	N	6	7	7
	Std. Deviation	1.17	1.13	.90
2	Mean	1.33	3.00	2.33
	N	3	3	3
	Std. Deviation	.58	1.00	1.53
3	Mean	1.13	3.38	3.25
	N	8	8	8
	Std. Deviation	.35	.74	.71
4	Mean	2.50	3.75	3.25
	N	4	4	4
	Std. Deviation	1.00	.50	.96
5	Mean	1.43	2.50	3.21
	N	14	14	14
	Std. Deviation	.51	.52	.70
6	Mean	1.00	2.50	2.50
	N	2	2	2
	Std. Deviation	.00	.71	.71
Total	Mean	1.73	2.87	3.11
	N	37	38	38
	Std. Deviation	.99	.84	.83

Note:

IRQ1: My principal knows and shares the latest research findings on teaching and learning spelling, writing, and reading to teachers through the use of copies of journal articles, books, memos, or discussion.

IRQ4: My principal sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities.

IRQ9: My principal uses spelling achievement test results to assess the school's progress in spelling.

As noted in Table 56, the sharing of the latest research findings with staff by principals seemed to occur with most frequency among all six schools compared to the setting aside of time at faculty meetings to discuss Process Spelling, or reviewing spelling assessment information.

Perceptions of staff in schools 2, 5, and 6 showed the most consistent leadership and direction of school mission (Table 57). Staff perceptions in School 3 indicated an uncertainty in the direction of the mission of the school.

Table 57. Instructional Resource Belief Mean Comparison.

School	IRBEL4
1 Mean	1.86
N	7
Std. Deviation	.69
2 Mean	1.33
N	3
Std. Deviation	.58
3 Mean	3.00
N	8
Std. Deviation	1.07
4 Mean	2.75
N	4
Std. Deviation	1.26
5 Mean	1.36
N	14
Std. Deviation	.50
6 Mean	1.50
N	2
Std. Deviation	.71
Total Mean	1.95
N	38
Std. Deviation	1.01

Note:

IRBEL4: Leadership and the direction of the school's mission have been consistent over the last five years.

As indicated in Table 58, the two principal communicator behaviors occurring with most frequency among all schools involved the conveyance of high expectations for teacher and student performance, and active involvement of teachers in school decision making. School 2 showed a comparatively high frequency of principal acknowledgment

of teacher efforts with regards to Process Spelling.

Table 58. Communication frequency behavior mean comparisons.

School		CQ2	CQ5	CQ7	CQ10
1	Mean	1.14	2.50	2.43	1.29
	N	7	6	7	7
	Std. Deviation	.38	.84	1.27	.49
2	Mean	1.33	2.33	2.00	1.00
	N	3	3	3	3
	Std. Deviation	.58	.58	.00	.00
3	Mean	1.13	3.25	2.50	1.87
	N	8	8	8	8
	Std. Deviation	.35	.71	1.07	.99
4	Mean	2.00	3.75	3.25	1.75
	N	4	4	4	4
	Std. Deviation	1.41	.50	.96	.96
5	Mean	1.07	2.43	2.00	1.43
	N	14	14	14	14
	Std. Deviation	.27	.65	.88	.76
6	Mean	1.00	2.50	1.50	1.00
	N	2	2	2	2
	Std. Deviation	.00	.71	.71	.00
Total	Mean	1.21	2.76	2.29	1.47
	N	38	37	38	38
	Std. Deviation	.58	.80	1.01	.76

Note:

CQ2: My principal conveys high expectations for teacher and student performance.

CQ5: My principal discusses Process Spelling with teachers at faculty meetings.

CQ7: My principal acknowledges or compliments teachers for their efforts or performance with regard to spelling instruction.

CQ10: My principal actively involves teachers in decision making for school decisions.

As indicated in Table 59, elementary school staff appeared to agree expectations for the instruction of Process Spelling were expressed by principals when the program began. Teacher perceptions of additional communication behaviors related to principal expectations of Process Spelling were mixed.

Table 59. Communication beliefs mean comparisons.

School	CBEL5	CBEL6	CBEL7
1 Mean	2.00	2.14	2.57
N	7	7	7
Std. Deviation	.58	.69	.53
2 Mean	1.33	1.67	2.67
N	3	3	3
Std. Deviation	.58	.58	.58
3 Mean	1.88	2.00	3.00
N	8	6	8
Std. Deviation	.35	.00	.53
4 Mean	2.75	3.25	3.50
N	4	4	4
Std. Deviation	.50	.50	.58
5 Mean	1.38	1.50	2.71
N	13	14	14
Std. Deviation	.51	.52	.61
6 Mean	1.50	1.50	3.00
N	2	2	2
Std. Deviation	.71	.71	.00
Total Mean	1.76	1.92	2.84
N	37	36	38
Std. Deviation	.64	.73	.59

Note:

CQ5: My principal set and expressed her/his expectations for Process Spelling instruction to staff when the program was started.

CQ6: My principal sets and expresses her/his expectations with regard to Process Spelling instruction to teachers new to my school.

CQ7: My principal reinforces expectations regarding Process Spelling instruction to staff at least one time per month.

According to Table 60, on-going teacher collaboration was promoted by principals across the District. Perceptions of staff in School 5 regarding frequencies of teacher collaboration and the teacher-leader concept appeared to be especially high in comparison to other elementary schools. Action research did not appear to be perceived as occurring with any great frequency in the District.

Table 60. Resource Provider Mean Comparisons.

School	RPQ3	RPQ6	RPQ8
1 Mean	2.43	1.71	3.43
N	7	7	7
Std. Deviation	1.13	.95	.98
2 Mean	2.00	1.33	4.00
N	2	3	3
Std. Deviation	.00	.58	.00
3 Mean	3.14	1.63	3.75
N	7	8	8
Std. Deviation	1.07	.52	.71
4 Mean	3.50	2.25	3.25
N	4	4	4
Std. Deviation	1.00	1.26	.96
5 Mean	1.64	1.21	3.07
N	14	14	14
Std. Deviation	.84	.43	1.07
6 Mean	2.50	1.50	2.50
N	2	2	2
Std. Deviation	.71	.71	.71
Total Mean	2.36	1.53	3.34
N	36	38	38
Std. Deviation	1.13	.73	.94

Note:

RPQ3: My principal uses the teacher-leader concept at the school site for Process Spelling.

RPQ6: My principal encourages on-going teacher collaboration regarding instruction in all areas.

RPQ8: My principal encourages and provides for action research.

Table 61. Visibility beliefs mean comparisons.

School	VBEL8	VBEL9	VBEL10
1 Mean	2.57	2.33	2.71
N	7	6	7
Std. Deviation	.79	.82	.76
2 Mean	1.67	1.33	2.33
N	3	3	3
Std. Deviation	.58	.58	.58
3 Mean	2.75	2.63	2.71
N	8	8	7
Std. Deviation	.89	.74	.95
4 Mean	3.25	2.75	2.50
N	4	4	4
Std. Deviation	.96	1.26	1.00
5 Mean	3.14	1.57	1.86
N	14	14	14
Std. Deviation	.95	.51	.86
6 Mean	2.00	1.50	2.00
N	2	2	2
Std. Deviation	.00	.71	.00
Total Mean	2.79	2.03	2.30
N	38	37	37
Std. Deviation	.93	.87	.88

Note:

VB8: My principal conducts informal observations in my classroom, during the instruction of any subject, on a weekly basis.

VB9: My principal actively participates in staff development activities related to Process Spelling.

VB10: My principal includes Process Spelling instruction as part of the formal evaluation process.

Perceptions regarding three behaviors related to principal visibility appeared to be relatively consistent in each school (Table 61). School 2 appeared to have the highest perception of teachers regarding high principal visibility. Perceptions regarding principal participation in Process Spelling professional development activities were greatest across all schools in the District.

As indicated in Table 62, teacher beliefs regarding Process Spelling were positive.

Survey evidence suggested four out of six school staffs believed the instructional leadership of the principal positively impacted teacher effectiveness.

Table 62. General Process Spelling belief mean comparisons.

School	BEL1	BEL2	BEL3
1 Mean	1.43	1.29	1.71
N	7	7	7
Std. Deviation	.53	.49	.76
2 Mean	1.00	1.33	1.33
N	3	3	3
Std. Deviation	.00	.58	.58
3 Mean	1.38	1.38	2.29
N	8	8	7
Std. Deviation	.52	.52	.76
4 Mean	1.75	1.50	2.00
N	4	4	4
Std. Deviation	.50	.58	.82
5 Mean	1.21	1.57	1.57
N	14	14	14
Std. Deviation	.43	.51	.76
6 Mean	1.00	1.50	1.00
N	2	2	2
Std. Deviation	.00	.71	.00
Total Mean	1.32	1.45	1.73
N	38	38	37
Std. Deviation	.47	.50	.77

Note:

BEL1: I believe Process Spelling is an effective instructional methodology.

BEL2: I consider myself effective in the delivery of Process Spelling.

BEL3: I feel the leadership behaviors of my principal make me a more effective teacher.

Summary

In this chapter, the results of a study of the relationship between the instructional leadership practices and beliefs of elementary school principals in the Bozeman Public Schools during a curricular innovation and student achievement in spelling as reflected in standardized test scores were reported. The study was conducted in order to seek information about one main research question and two sub-questions:

- What specific principal attributes and instructional leadership practices and beliefs are related to the effectiveness of Process Spelling as inferred from spelling achievement scores?
 - What instructional leadership practices and beliefs of principals related to Process Spelling are practiced at elementary schools in Bozeman?
 - Do relationships exist between the implementation of the Process Spelling curriculum in grades 1 through 3 in the Bozeman Public Schools and increases in CTBS spelling scores and TWS-3 scores?

The detailed findings presented in this chapter serve as the basis for the grounded theory and implications reported in Chapter 5. Recommendations for further research will also be offered in Chapter 5.

CHAPTER 5

CONCLUSIONS

The primary purpose of Chapter 5 is to present conclusions in the form of a grounded theory and implications derived from a study of the relationship between principal instructional leadership practices and beliefs and the implementation of Process Spelling in the Bozeman Public Schools. The study explored the relationship between the instructional leadership practices and beliefs of elementary school principals in the Bozeman Public Schools during a curricular innovation in spelling and student spelling achievement as reflected in test scores.

In the study, four major categories of instructional leadership principal practices that have been associated with effective schools were examined in the context of the implementation of Process Spelling in the Bozeman Public Schools. The intents were to determine which instructional leadership practices and beliefs of principals related to Process Spelling were practiced at elementary schools in Bozeman during a three-year period of curricular innovation in spelling and what specific principal attributes and instructional leadership practices and beliefs were related to the effectiveness of the implementation of Process Spelling as inferred from spelling achievement scores. The four major categories of instructional leadership practices and beliefs were: the principal as instructional resource, the principal as resource provider, the principal as a

communicator, and the principal as a visible presence.

Participants in this study were classroom teachers in grades 1 through 3 and the six associated elementary principals. Five principals had worked at their current schools for more than three years. One school had several principal turnovers in the past three years.

Generalizability

The use of the case-study approach and non-randomization in the selection of the sample and subjects of the study restricts generalizability of the findings of the study to a wider population. The findings of this study may be generalized only to the target population of grades 1, 2, and 3 in the Bozeman Public Elementary schools. Findings could be different if schools in the district were studied over a longer period of time, instead of focusing on a three-year period, or if additional grades were included, etc.

Research Design

The design of this study was a multi-site case study, describing principal instructional leadership activities during a curricular implementation. There was no manipulation of variables. The researcher did not make any a priori assumptions concerning the utility of specific research findings in the development of the grounded theory.

School Profiles

Six individual school profiles were generated consisting of principal instructional leadership surveys, principal interviews, instructional leadership teacher surveys, school demographic data, school mission statements, in-service attendance information, and spelling test score results including descriptive and inferential statistics.

Two parallel forms of the survey instrument were developed to reflect the differing perspectives of each group: a self-assessment form completed by the principal and a teacher form. The survey instruments assessed the four main areas of instructional leadership described by Smith and Andrews (1989). These four dimensions were expanded by the researcher into specific instructional leadership practices and beliefs related to the implementation of Process Spelling. The school profile data were presented in Chapter 4.

Reconstructed Findings

According to methodology described in Chapter 3, instructional leadership survey results and spelling test score results were reduced to relative rankings and organized into comparative tables (Table 63). It is important to note that the rank order does not imply outstanding or poor performance, but rather relative position within the school district. For each school, grade level test scores were pooled to provide for inter-school test score achievement comparisons; and grade level test score significant differences were calculated to examine intra- and inter-school grade level test score patterns. The

“reconstruction” (Lincoln & Guba, 1985, p. 332) of survey information based on Smith and Andrews’ (1989) four categories of instructional leadership, and the use of data reduction techniques to recast survey and test score data, provided the basis for an inductively derived grounded theory of instructional leadership during a curricular implementation in the Bozeman Public Schools.

Reconstructed findings were based only on survey and test score data compiled in each school profile; other school profile information, i.e., instructional leadership variables depicted in Figure 1, was considered to be highly context-dependent and was not used directly in the development of the grounded theory. Nevertheless, instructional leadership variables were ultimately examined in relation to the findings of the grounded theory.

Table 63. Survey and Test Score Ranking.

Survey Data Ranking						
Survey Section	School 1	School 2	School 3	School 4	School 5	School 6
IRBEL	4	1	6	5	2	3
IRFREQ	5	2	4	6	3	1
RPFREQ	3	4	5	6	1	2
VBEL	4	1	5	6	3	2
CFREQ	4	2	5	6	3	1
CBEL	4	1	5	6	2	3
BELALL	4	2	5	6	3	1
Mean Rank	4.00	1.86	5.00	5.86	2.43	1.86

Note: Rankings represent relative position within the school district.

IRBEL: Instructional resource practice beliefs

IRFREQ: Instructional resource practice frequencies

RPFREQ: Resource provider practice frequencies

VBEL: Visible presence practice beliefs

CFREQ: Communicator practice frequencies

CBEL: Communicator practice beliefs

BELALL: Process Spelling beliefs

Test Score Achievement Ranking						
Test	School 1	School 2	School 3	School 4	School 5	School 6
Fall TWS-3	1	6	4	3	2	5
Spring TWS-3	2	4	3	6	1	5
CTBS	3	4	2	5	1	6
Mean Rank	2.00	4.67	3.00	4.67	1.33	5.33

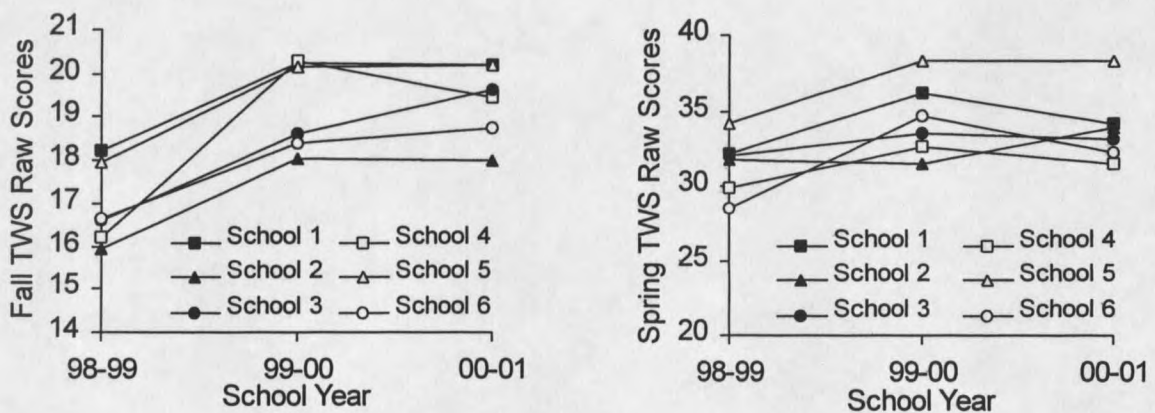
Test Score Improvement Ranking for 1998-99 to 2000-01						
Test	School 1	School 2	School 3	School 4	School 5	School 6
Fall TWS-3	6	5	2	1	3	4
Spring TWS-3	4	3	6	5	1	2
CTBS	4	3	6	1	2	5
Mean Rank	4.67	3.67	4.67	2.33	2.00	3.67

Based on rankings of survey results, pooled TWS-3 raw score means across grades 1, 2, and 3, and CTBS national percentile means for grade 3, instructional leadership practices and beliefs and perceptions were not positively associated with school level test score achievement or improvement during the three year study interval (Table 63). Relative to the full set of six study schools, the two schools ranking the highest in terms of qualitative assessment of instructional leadership practices and beliefs, Schools 2 and 6, were characterized by medium to low test score achievement and medium to irregular test score improvement. The two schools with intermediate assessment of instructional leadership practices and beliefs, Schools 5 and 1, were characterized by high test score achievement and medium to high test score improvement. The two schools ranking the lowest in terms of qualitative assessment of instructional leadership practices and beliefs, Schools 3 and 4, were characterized by medium to low test score achievement and low to irregular test score improvement. Schools 5 and 1, the largest schools in terms of student population over the study period, were associated with

the highest test score achievement rankings.

Regardless of inter-school differences in test score achievement levels, general patterns of TWS-3 score improvement and change were relatively consistent across the six study schools (Figure 5). For fall TWS-3, each school realized the greatest year-to-year test score increase between the 1998-99 and 1999-00 school years (Table 64); for spring TWS-3, five out of the six schools realized the greatest year-to-year test score increases between the 1998-99 and 1999-00 school years. Low test score improvement or test score declines occurred in all six schools for fall TWS-3 between the 1999-00 and 2000-01 school years; low test score improvement or test score declines occurred in five of the six schools for spring TWS-3 between the 1999-00 and 2000-01 school years. There were no overall test score declines for fall or spring TWS-3 across the three school year period of 1998-99 to 2000-01.

Figure 5. School by school comparison of TWS-3 trends for the 1998-99, 1999-00, and 2000-01 school years.



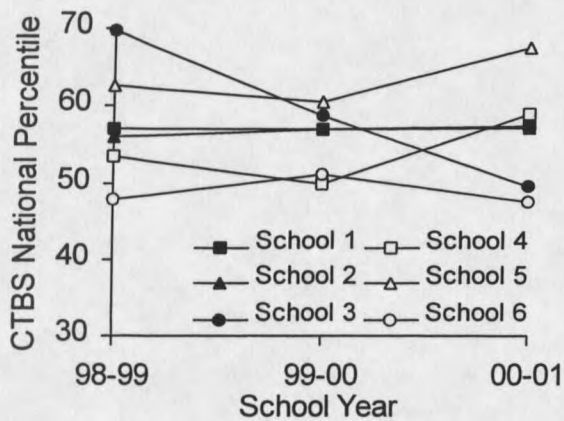


Table 64. Test Score Improvement.

School	Test	Test Period	Interval	Test Score Improvement	Rank
4	TWS-3	fall	98-99 to 99-00	4.06	1
5	TWS-3	fall	98-99 to 99-00	2.22	2
2	TWS-3	fall	98-99 to 99-00	2.15	3
1	TWS-3	fall	98-99 to 99-00	2.03	4
3	TWS-3	fall	98-99 to 99-00	2.02	5
6	TWS-3	fall	98-99 to 99-00	1.78	6
3	TWS-3	fall	99-00 to 00-01	1.04	7
6	TWS-3	fall	99-00 to 00-01	0.33	8
5	TWS-3	fall	99-00 to 00-01	0.01	9
1	TWS-3	fall	99-00 to 00-01	-0.05	10
2	TWS-3	fall	99-00 to 00-01	-0.05	11
4	TWS-3	fall	99-00 to 00-01	-0.83	12
6	TWS-3	spring	98-99 to 99-00	6.19	1
5	TWS-3	spring	98-99 to 99-00	4.12	2
1	TWS-3	spring	98-99 to 99-00	4.10	3
4	TWS-3	spring	98-99 to 99-00	2.85	4
2	TWS-3	spring	99-00 to 00-01	2.40	5
3	TWS-3	spring	98-99 to 99-00	1.55	6
5	TWS-3	spring	99-00 to 00-01	0.05	7
2	TWS-3	spring	98-99 to 99-00	-0.19	8
3	TWS-3	spring	99-00 to 00-01	-0.38	9
4	TWS-3	spring	99-00 to 00-01	-1.17	10
1	TWS-3	spring	99-00 to 00-01	-1.98	11
6	TWS-3	spring	99-00 to 00-01	-2.43	12

School	Test	Test	Interval	Test Score	Rank
		Period		Improvement	
4	CTBS	n/a	99-00 to 00-01	9.08	1
5	CTBS	n/a	99-00 to 00-01	6.98	2
6	CTBS	n/a	98-99 to 99-00	3.39	3
2	CTBS	n/a	98-99 to 99-00	1.07	4
1	CTBS	n/a	99-00 to 00-01	0.48	5
2	CTBS	n/a	99-00 to 00-01	0.23	6
1	CTBS	n/a	98-99 to 99-00	0.19	7
5	CTBS	n/a	98-99 to 99-00	-1.91	8
4	CTBS	n/a	98-99 to 99-00	-3.46	9
6	CTBS	n/a	99-00 to 00-01	-3.52	10
3	CTBS	n/a	99-00 to 00-01	-9.13	11
3	CTBS	n/a	98-99 to 99-00	-10.98	12

Patterns of CTBS score improvement and change were inconsistent across the six study schools between the 1998-99 and 1999-00 school years and the 1999-00 and 2000-01 school years (Figure 5). In contrast to the relatively synchronous TWS-3 pattern of large test score increases between the 1998-99 and 1999-00 school years, only two of the six schools realized a relatively large CTBS score increase during this period (Table 64). Two of the six schools realized CTBS score declines across the three school year period of 1998-99 to 2000-01.

For TWS-3, specific grade level patterns of test score improvement and change were less consistent between schools than the pooled grade level patterns of test score improvement and change described above. Based on tests of significance between grade specific test score medians, the greatest number of significant differences associated with TWS-3 score increases occurred between the 1998-99 and 1999-00 school years (Table 65). This result was in keeping with the general school level pattern of increased TWS-3 scores during this period. However, there did not appear to be any synchronous patterns

of significant test score change with respect to the individual grade levels. There were no significant year-to-year differences in the grade 3 CTBS data, and only one significant CTBS score difference across the three school year study period.

Table 65. Grade Level Significant Differences.

School	Grade	Test	98-99 to 99-00	99-00 to 00-01	98-99 to 00-01
1	1	TWS-3 Fall			
1	1	TWS-3 Spring	+	-	
1	2	TWS-3 Fall		+	+
1	2	TWS-3 Spring	+		+
1	3	TWS-3 Fall	+	-	
1	3	TWS-3 Spring			
1	3	CTBS			
2	1	TWS-3 Fall			
2	1	TWS-3 Spring			
2	2	TWS-3 Fall	+	-	
2	2	TWS-3 Spring			
2	3	TWS-3 Fall			
2	3	TWS-3 Spring			
2	3	CTBS			
3	1	TWS-3 Fall		+	+
3	1	TWS-3 Spring			
3	2	TWS-3 Fall	+		+
3	2	TWS-3 Spring		+	+
3	3	TWS-3 Fall			
3	3	TWS-3 Spring		-	
3	3	CTBS			-
4	1	TWS-3 Fall			
4	1	TWS-3 Spring		-	-
4	2	TWS-3 Fall			
4	2	TWS-3 Spring			
4	3	TWS-3 Fall			+
4	3	TWS-3 Spring			+
4	3	CTBS			
5	1	TWS-3 Fall		-	-
5	1	TWS-3 Spring	-	+	
5	2	TWS-3 Fall	+	-	

School	Grade	Test	98-99 to 99-00	99-00 to 00-01	98-99 to 00-01
5	2	TWS-3 Spring	+	-	
5	3	TWS-3 Fall		+	+
5	3	TWS-3 Spring	+	+	+
5	3	CTBS			
6	1	TWS-3 Fall			
6	1	TWS-3 Spring	+		+
6	2	TWS-3 Fall		+	+
6	2	TWS-3 Spring			
6	3	TWS-3 Fall	+		
6	3	TWS-3 Spring			
6	3	CTBS			

Note: Plus (+) symbols indicate statistically significant test score increases; minus (-) symbols indicate statistically significant test score decreases.

Grounded Theory

Grounded theory development led to an inductively derived theory about which practices and beliefs in instructional leadership, when implemented during this Process Spelling curriculum adoption, were related to increased pupil academic performance as indicated by achievement test scores. The analysis consisted of procedures in which the data were re-assembled in new ways, allowing for connections between categories and subcategories to be made.

In this study, both low and high instructional leadership rankings were associated with low overall achievement in spelling, and mid-range instructional leadership rankings were associated with high overall achievement in spelling. Based on the ranking data in Table 63, Schools 4, 5, and 6 represent the full range of instructional leadership practices and beliefs, i.e., low, medium, and high, respectively, as perceived by teachers. In

addition, these schools also represent the extremes of spelling achievement, i.e., low, high, and low, respectively.

Overall test score achievement rankings (Table 63) were a measure of average student performance over the three year period of the study. School 4 exhibited a low to medium overall achievement ranking, School 5 exhibited a high overall achievement ranking, and School 6 exhibited a low overall achievement ranking.

Student performance in the 1998-99 school year was a measure of achievement during the first year of the three year study period. It is important to note that school achievement in the first year of the study period, as indicated in school profile information, was lowest in Schools 4 and 6 and highest in School 5.

When overall test score improvement rankings were examined for the three tests across the three year test period, the results were equivocal (Table 63), i.e., uneven improvement rankings per school with respect to the three tests. It is important to note that this pattern of improvement provides information of overall rankings without respect to grade level or school level significant differences. Therefore, grade level significant difference patterns (Table 65) were employed as a more refined measure of test score change over the three year period. Grade level significant differences were examined in terms of the direction of change and not the magnitude of change. School 6 shows a net change of three significant test score increases (three significant differences associated with test score increases and no significant differences associated with test score decreases), which is the highest value for the six schools. School 5 shows a net change of two significant test score increases (six significant differences associated with test score

increases and four significant differences associated with test score decreases), which is the modal value for the six schools. School 4 shows a net change of one significant test score decrease (no significant difference associated with test score increases and one significant difference associated with test score decreases), which is the lowest value for the six schools.

This examination of Schools 4, 5, and 6, based on instructional leadership survey rankings, overall test score achievement, 1998-99 test score achievement, overall test score improvement, and grade level significant differences, provided an initial basis for grounded theory development. School 5 had the highest overall test score achievement among the six schools while School 6 had the most net grade level significant differences associated with test score increases. Based on comparisons among Schools 4, 5, and 6 (Tables 56-61, pages 194-199), and school profile information, specific instructional leadership practices and beliefs were found to be most similar between Schools 5 and 6. Instructional leadership practices and beliefs in School 4 were found to be very dissimilar from Schools 5 and 6. The selection of School 5 for the actual grounded theory was based on instructional leadership survey data and the concurrent overall high level of pupil performance in spelling.

The instructional leadership practice frequencies and beliefs which occurred in School 5, evidenced by teacher survey data to be most different from instructional leadership practice frequencies and beliefs of other principals of schools which did not recognize a similar level of achievement, are listed within the context of the variables investigated according to the four instructional leadership categories posited by Smith

and Andrews (1989). The instructional leadership practices and beliefs are then discussed in the context of the literature. It is interesting to note the nine instructional leadership practice frequencies and beliefs discerned to be highest in School 5, which had one of the most effective implementations of Process Spelling, were lowest in School 4, which exhibited the least effective implementation of Process Spelling.

Instructional Resource

Based on calculated means (Table 56 and Table 57) indicating high levels of frequency or belief, one behavior and one belief related to the instructional resource aspect of instructional leadership were of note in the survey data:

- The principal, as instructional leader, sets aside time at faculty meetings for teachers to share ideas on spelling instruction or information regarding Process Spelling activities.
- Leadership and the direction of the school's mission have been consistent over the last five years.

According to Smith and Andrews (1989), "the principal's ability to help teachers expand their use of instructional strategies is key to improving the school" (p. 33).

Instructional leadership behaviors affect teacher development pedagogically, emotionally, and professionally. Smith and Andrews (1989) suggest staff meetings be organized as "instructional episodes" with the principal serving as a teacher or facilitator (p. 42). Louis and Kruse (1995) identify physical factors that support learning communities, and include time to meet and talk, physical proximity of staff to one another, interdependent teaching

roles, well-developed communication structures, school autonomy, and teacher empowerment. Principals' effective teacher development strategies include: (a) emphasizing the study of teaching and learning; (b) supporting collaboration efforts among educators; (c) developing coaching relationships among educators; (d) encouraging and supporting redesign of programs; (e) applying the principles of adult learning, growth, and development to all phases of staff development; and (f) implementing action research to inform instructional decision making (Blase & Blase, 1999, p. 363). Much of this may be accomplished at faculty meetings geared toward raising the discourse regarding instruction and specific content delivery.

According to Fullan (1999), "the main problem with educational systems and corresponding innovation and policy making is that they are intrinsically, endemically, inevitably overloaded and fragmented," and suggests the solutions "have to be ones that contribute to coherence making and connectedness" (p. vii). Effective schools research emphasizes the importance of goals and purposes, clear mission, and the articulation and modeling of school purposes (Brookover & Lezotte, 1979; Bossert et. al., 1982; Blumberg & Greenfield, 1980). Uncertainty regarding goals or school purposes due to lack of communication or lack of definition may lead to diffuse purposing and an overall lack of focus and achievement of specific goals.

Communicator

Based on calculated means (Table 58 and Table 59) indicating high levels of frequency or belief, two behaviors and two beliefs related to the communication aspect of

instructional leadership were prominent in the survey data:

- The principal, as instructional leader, conveys high expectations for teacher and student performance.
- The principal, as instructional leader, discusses Process Spelling with teachers at faculty meetings.
- The principal, as instructional leader, set and expressed expectations for Process Spelling instruction to staff when the program was started.
- The principal, as instructional leader, sets and expresses expectations with regard to Process Spelling instruction to teachers new to my school.

Effective schools have “high optimism and expectations for student learning”

(Sergiovanni, 1995, p. 153). Just as classroom teachers should convey high academic and behavioral expectations to students, principals must convey high expectations for teacher performance. Effective administration and supervision foster teacher motivation.

According to Glickman et al. (1995), supervision can stimulate teachers to appraise, reflect, and adapt their instruction and also challenge teachers toward more varied, abstract thought.

Work by Kurtz (1983) and Corcoran (1981) cites lack of knowledge of expectations among new teachers as part of inadequate induction of beginning teachers. In addition, a lack of dialogue about instruction, among veteran and novice staff, seems more commonplace than rarity. A similar lack of communication regarding expectations often exists during curricular innovations. Rosenholtz (1989) discusses specificity and its

importance to goals because specific goals present teachers with defined ways to organize and execute instruction.

Glickman et al. (1995) describe faculty meetings as informational, and write that when school concerns are raised, they are often deflected to noninstructional matters including schedules, district policies, extracurricular responsibilities, and building maintenance." Faculty meetings, however, should provide opportunities for the promotion of professional learning. According to Wood and McQuarrie (1999), more and more principals have modified faculty meetings by including time for teachers to share best practices and discuss new instructional procedures.

Resource Provider

Based on calculated means (Table 60) indicating high levels of frequency, two behaviors related to the resource provider aspect of instructional leadership were prominent in the survey data:

- The principal, as instructional leader, uses the teacher-leader concept at the school site for Process Spelling.
- My principal encourages on-going teacher collaboration regarding instruction in all areas.

Teacher-leaders can contribute to the leadership essential to support curricular implementation (Goodlad, 1984; Lieberman et al., 1988; Miller, 1990). The concept of teacher leadership is relatively new, and research suggests that typically, teacher leadership positions have not serviced teachers in a school-wide sense due possibly to a

lack of time to work with other teachers at the building level, and spending a majority of time in committee meetings (Diercks et al., 1988; Smylie & Denny, 1990). Smylie (as cited in Carter and Powell, 1992) suggests a teacher-leader's amount of available time and access to other teachers determines the extent to which a teacher-leader can successfully support colleagues. Rosenholtz (1989) views the benefits of teacher leadership as multi-faceted: revealing new ways of doing things; suggesting and inspiring ideas and discussion; helping others with challenging problems. Schmoker (1999) makes a case for formalized teacher leadership, and suggests cultivating teacher-leaders at every school, providing a stipend, providing them with release time and administrative training, and involving the faculty in their selection.

Inquiry and local capacity provide the foundation for professional development. It is the principal's responsibility to create a climate of high motivation and strong commitment that will lead to a culture of job-embedded professional development. To do this, the principal must be oriented to individual teacher needs based on stage theory and adult learning theory, provide for a variety of professional development experiences, seek to end the isolative nature of working in classroom education, and promote a culture of inquiry and job-embedded personal and professional development.

Blase and Blase (1999), in a study of over 800 elementary and secondary teachers from schools in the southeastern, midwestern, and northwestern United States, sought to discover the characteristics (e.g., strategies, behaviors, attitudes, goals) of instructional leaders which positively influence classroom teaching. The researchers also examined the personal and professional effects of leader-teacher interactions and whether staff

