

A Review of Literature on Principal Instructional Leadership

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Statement of the Problem

Principals have many roles: building and grounds supervisor, evaluator, student disciplinarian, parent counselor, teacher cheerleader, and instructional leader. As principals are charged with the role of promoting effective instruction and evaluating instruction, the principal has leverage to move schools toward systemic change. The purpose of this paper is to explore what the research says about what effective principals need to know in order to improve teaching and student learning.

The mandates of No Child Left Behind and state accountability systems, designed to leverage reforms for schools not meeting the needs of underperforming students, are among the most challenging requirements in the history of education. Principals are being called upon to act as instructional leaders with their primary responsibility being the transformation of instruction so that every child learns to high academic standards. The question at hand is what do principals need to know in order to successfully lead instructional reform? What does a principal need to know about the subject matter of the reform and the instructional strategies used to teach the subject matter and how does that knowledge get transformed into action in their work?

The need for school principals to accept the role of instructional leader is stronger than ever. In the year 2014, every child must perform at the proficient level on high stakes testing as a part of No Child Left Behind (NCLB). No Child Left Behind is the reauthorization of the Elementary and Secondary Education Act, which requires annual testing of all students in grades three through eight and an aggressive twelve-year timeline to achieve proficiency in reading and mathematics. It also includes identification of low-performing schools based on test scores, and penalties for schools that do not improve. Schools are being held accountable so that all students

reach high academic standards, despite the fact that there are large groups of students, based on race and socioeconomic factors that are not performing at the same level as their grade level peers.

There are also state accountability mandates. The Public Schools Accountability Act (PSAA) in California requires improved student performance and school improvement. California's PSAA holds schools accountable for meeting high levels of student achievement through a system of standardized testing, curriculum standards, and sanctions. Schools are responsible for ensuring a determined level of performance and for increasing the performance from year to year (Woody, Buttles, Kafka, Park, & Russell, 2004, p. 450).

Researchers have been interested in the analogous question for teachers for nearly two decades. A major shift in teaching occurred when Shulman (1986) focused attention on the teacher's knowledge of subject matter as important by identifying what a teacher should know and to what level the teacher should know it. "*Pedagogical content knowledge*" as proposed by Shulman also included how teachers should understand the subject matter, so that they could help others learn it. This pedagogical content knowledge included an understanding of the subject matter, but also included the knowledge on how to teach this information. Ball (2000) suggests that it is not just what mathematics teachers know, but how they know it and how they are able to use their knowledge of mathematics in the course of teaching. In a recent study, Hill, Rowan and Ball (2005) found that teachers' mathematical knowledge was significantly related to student achievement gains. The measure of teachers' mathematical knowledge was based on specialized mathematical knowledge and skills used in teaching mathematics.

This research on how teachers understand their subject matter can be applied to the role of principal to ask "What do principals know about the content of their work (subject matter

content and instruction) and how do they use that knowledge coupled with leadership skills to improve teaching and learning?” Examining the role that content knowledge and leadership play in the role of school leaders will contribute to a more nuanced understanding of the principal’s work as an instructional leader. At this time of unprecedented pressure for school improvement, it is essential to know more about the role of principal instructional leadership.

Methodology of the Review

This review of literature of instructional leadership focused on how principals influence teaching and learning. We know that principals play a key role in efforts to improve teaching and learning. This review will begin by examining the research on instructional leadership. Then the review will focus on a new line of work, leadership content knowledge.

Identifying literature on instructional leadership for principals began with a search of the ERIC database using the following descriptors: instructional leadership, leadership, leadership content knowledge, subject matter knowledge, content knowledge, school leadership and policy implementation. I then reviewed reference lists from the resulting studies, which provided many additional citations.

Overview/Scope

Learning is a process of construction of knowledge, which uses current understandings to construct new learning. The constructivist view of learning assumes that learning involves active creation on the part of the learner. Learning occurs when new ideas become meaningful and useable by integration with pre-existing knowledge and understandings. Learning is also a social activity, which occurs through interaction with others (Coburn, 2001, 2005; Krug, 1992;

Leithwood & Hallinger, 1993). This constructive perspective of learning is the foundation that will be used to examine connections of leadership to teaching and learning in this review.

This literature review draws on a review of both empirical studies and theoretical frameworks regarding school leaders, sensemaking and leadership content knowledge. Empirical studies from peer-reviewed journals were the first level of research included in this review. The empirical research in this area is limited, so studies from school reform, teacher professional development, and student achievement will be explored.

Review

Instructional Leadership

It has been well documented that principals play a key role in efforts to improve teaching and learning (Coburn, 2001, 2005; Fink & Resnick, 2001; Heck & Hallinger, 2005; Hightower, 2002; Hightower, Knapp, Marsh, & McLaughlin, 2002; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Marzano, Waters, & McNulty, 2005; McLaughlin & Mitra, 2001; Nelson, 1998; Nelson, Benson, & Reed, 2004; Nelson & Sassi, 2000a, 2000b, 2005; Nelson, Sassi, & Grant, 2001; O'Day, 2002; Smylie, Wenzel, & Fendt, 2003; Spillane et al., 2002; Waters, Marzano, & McNulty, 2003; Woody, Buttles, Kafka, Park, & Russell, 2004). In the current environment of accountability and commitment to reducing the achievement gap, there is enormous pressure on school administrators to focus on instructional leadership.

The Effective Schools movement in the early 1980's marked the beginning of efforts to investigate the relationship between leadership and student outcomes. During the 1990's, there was increasing demand for accountability for student performance that fell on the shoulders of the principal. Currently, the limited focus of teaching and learning in instructional leadership is

being re-examined in this time of high standards and school accountability (Prestine & Nelson, 2003; Stein & Spillane, 2005).

There is a growing opinion that the field can be improved by establishing connections to the research on teaching and teacher learning (Prestine & Nelson, 2003; Rowan, 1995; Stein & Spillane, 2005). Stein and Spillane (2005) examine the research that seeks to identify the connections between educational practice and student achievement. The studies fall into four categories:

1. Direct correlates between educational leader behavior and student learning.
2. Mediation paradigms, which examine the behavior of the educational leader, a mediational process and the resulting student learning outcome.
3. Learning through interaction with others and student learning outcome
4. Cognitive frames of research examine educational leader thinking, behavior, interaction with others and the resulting student learning outcomes.

This review of the research on instructional leadership will use the four categories identified by Stein and Spillane (2005) to organize the research on instructional leadership and student outcomes.

Direct correlates between educational leader behavior and student learning

One way to examine instructional leadership is to look for direct correlates between the educational leader's behavior and student learning. Two recent studies have examined the characteristics of high performing elementary schools on a statewide basis and how they are different from low performing schools. The studies differed in their findings. Williams, Kirst

and Haertel (2005) found in a large survey conducted in California, that Academic Performance Index scores were higher in schools with principals whose responses indicate that they act as managers of school improvement by driving the reform process and cultivating the school vision. Kannapel & Clements (2005) found that there was little difference in the area of leadership from the state conducted audits of low-performing schools in Kentucky.

The difference in the findings may be a result of their differing methodology. Williams, Kirst & Haertel (2005) used a large-scale survey of 257 elementary schools throughout California using only schools in the 25th to 35th percentile band of the School Characteristics Index and compared their survey results against the school's Academic Performance Index. Kannapel & Clements (2005) used the Kentucky School audit process in eight elementary schools. These differences in sample size and definitions of poverty may have contributed to the divergent conclusions.

Another large quantitative study that analyzed the effects of specific leadership practices was the meta-analysis of 70 studies of student achievement and leadership (Marzano, Waters, & McNulty, 2005; Waters, Marzano, & McNulty, 2003). The findings show that principal leadership is positively correlated with student achievement and has an average effect size of .25. Knowledge of curriculum and instruction, which included knowledge about assessment practices and providing guidance for teachers regarding effective classroom practices, had an equal effect size of .25. Marzano suggests that one way to make the job more manageable would be to identify what is essential to student learning.

This work to document the correlational relationship of the instructional leader and student learner has been criticized as being too simple a representation of a complex phenomenon (Heck & Hallinger, 2005). This method of study seeks causes in the behaviors of

principals and not as explanations of their influence. Also, the decontextualized nature of the findings limits their usefulness.

Mediational paradigms

A second group of studies looks at explaining the “black box” of the work of the principal. The mediation paradigm attempts to explain the actions that a principal takes that result in improved student achievement. Most research on mediational paradigms focus on how principals influence student learning by shaping features of the school organization (Heck & Hallinger, 2005; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Smylie, Wenzel, & Fendt, 2003; Spillane et al., 2002; Stein & D'Amico, 1999, 2002; Woody, Buttles, Kafka, Park, & Russell, 2004). Some features that a principal may influence that result in improved student outcomes are expectations for students, school mission, opportunities to learn, and instructional organization. One source of information on the role of the principal as instructional leader is on research in the area of accountability and school reform.

Research demonstrates the important role the principal plays in school reform. Woody et al. (2004) found that principals played a key role in how teachers experienced California accountability measures. The principal either buffered or pressured the teachers with the requirements of accountability. Successful schools used standards and ongoing assessments to gauge the schools progress (Woody et al., 2004). Smylie et al. (2003) found the principal had a “make-or-break” role in school development as a result of the authority associated with the position of principal and control of key resources. Principals in more highly developed schools were able to manage the schools resources, develop strong working relationships with the

external reform partners and work to minimize the disruptions by distractions to school improvement. (Smylie et al., 2003)

Stein and D'Amico (1999) have documented the ways that principals influence teacher learning through observations, feedback and extending classroom support. The mediational research demonstrates ways that principals exert influence, but little research other than the work of Stein and D'Amico exists that looks at the influence of principal's work with teachers to improve instruction and student learning.

The mediational paradigm of instructional leadership is limited primarily to the school effectiveness through student outcomes rather than the relationship of leadership to teaching and learning. Stein and Spillane (2005) hypothesize that the reason for the limited research on how principals impact teacher learning is the emphasis on social and organizational conditions and because principals are just beginning to assume roles of instructional leadership so there are few schools in which to observe learning opportunities for teachers. The site of the research in the influence of the principal on the instruction of teachers would be in the interaction of the principal and teacher. For this reason, it is important to study the ways that principals influence learning in their interaction with others.

Learning through interaction with others

The third group of studies in instructional leadership attempt to examine the relationship of leadership to learning in social settings. The principal's knowledge and beliefs about instruction contribute to instructional reform. This is evident in research that examines learning through interaction with others such as; creating a community of learners among a school staff, or how teacher and principal interaction influences sensemaking (Coburn, 2001, 2005; O'Day,

2002; Spillane et al., 2002). Principals play a role in promoting conditions that are required for teachers to work together to improve instruction. O'Day (2002) found that real change at the school site and across school sites in school reform was developing professional knowledge through focused assistance on instruction, professional norms and the professional patterns of interaction necessary for establishing the basis for ongoing organizational adaptations. Spillane, Diamond, Burch, Hallett, Jita & Zoltners (2002), found that principals acted as middlemen between teachers and district offices by being the sensemakers of accountability policies in three elementary schools in Chicago. District assessments and the use of data played a prominent role. The principals used the accountability policy and the test scores data to connect their leadership to instruction. Spillane found the differences between three principals in their beliefs and prior experience to be influential in the leaders response to the policy (Spillane et al., 2002).

Sensemaking has been studied in the area of instructional reform. In a study of teacher sensemaking, Coburn (2001) found that principals played a large role in shaping the sensemaking process for teachers by influencing where sensemaking happened, by privileging certain messages about reading and not others, by being a strong voice in the construction of understanding and by structuring the collaboration that happened in formal settings at the school.

Schools are often participants in multiple reforms, which cause much confusion and exhaustion and may limit effectiveness of school improvement. One example is of a high school principal leading a formal sensemaking process by working with her staff to develop a focus and philosophy for the school that allowed them to evaluate potential reforms. The school would develop a rubric to evaluate the reforms in consideration based on school priorities (Hatch, 2001).

Another example of facilitating teacher learning is Community School District #2 in New York using their framework for adult learning around literacy and applying it to their large scale reform around mathematics. In many ways the structure of the professional development for teachers and principals was the same, but the content of the sessions differed. The structure was aimed to reach all teachers and focused on providing the support that teachers would need to implement the math initiatives well. The professional development in the subject area occurred in both district and school-based workshops. It included carefully planned inter-visitations to other schools, grade-level meetings within school and in individual classrooms with school-based coaches (Stein & Nelson, 2003).

One well-documented example of development of principal subject matter knowledge and pedagogical knowledge is District 2 in New York. District 2 develops and sustains a culture of learning among its principals. Principal and teacher learning in this district are focused on student learning. Fink and Resnick (2001) describe a culture of learning about instruction and subject matter at all levels of the school district. San Diego City School district attempted to use the model that was developed in District 2 yet were largely unsuccessful. Hubbard, Stein and Mehan (2006) studied the interaction between school-leaders (principals and coaches) and teachers in the literacy reform in the San Diego City School District and found that principals needed to learn how to construct a community of learners and how to teach adult learners. The authors conclude that one of the reasons that the expertise failed was the inability to create successful learning communities within the districts and the schools.

The field of instructional leadership has developed from a list of characteristics of effective principals to a description of what effective principals do. We know from the research on learning through interaction with others that the principal plays an integral part in developing

supportive communities of practice (Coburn, 2001; Fink & Resnick, 2001). A limitation of this research that examines instructional leader interaction with others is that it is limited to overt behavior. We need to know not only what instructional leaders do but also how they think about what they do (Hallinger, Leithwood, & Murphy, 1993).

Cognitive frames

The fourth group of research in instructional leadership is through cognitive frames of research, which examines educational leader thinking, behavior, interaction with others and the resulting student learning outcomes. Using a cognitive perspective will allow a deeper understanding of the *how* of instructional leadership.

Given that leadership is evidenced only in social interactions, then the site of study should be the interactions between individuals (Stein & Spillane, 2005). Prestine and Nelson (2003) suggest redrawing what counts as the research site for instructional leadership “so that it includes teaching and learning and leadership, but also using methods that are anchored in the co-construction of meaning, the “jointedness,” that occurs when teachers and administrators work together in schools, as communities of practice, as well as methods that examine structural features of such arrangements (Prestine & Nelson, 2003, pp. 31-32)”.

An examination of the theory of sensemaking helps to guide the understanding of how principals’ understand subject matter and instruction, and how they use that in their work as a leader. Knowledge of subject matter and instruction may also come to influence how a principal works with a teacher to improve instruction in the context of educational reform. In research that bridges what we know about school leaders’ role in sensemaking with research on school leaders’ content knowledge, Coburn (2005) demonstrated that a school leader’s assumptions

about reading influenced how they understood and implemented reading policy. The principal's knowledge about reading instruction and teacher learning influenced how they interpreted reading policy. A principal with greater knowledge of reading instruction may be able to provide a framework for implementation of reform.

What do instructional leaders need to know and at what depth?

It would seem unlikely that principals would be able to know all subject areas at the same level of depth as the teachers. The question of interest is: What knowledge is important to instructional leadership - about school subjects, how students learn, what instruction should look like, and how learning should be measured? In a study of three constructivist teaching reforms, McLaughlin and Mitra (2001) found that there were five critical areas in sustaining theory-based change; sufficient resources, knowledge of first principles of the reform, a supportive community of practice, a supportive principal and a compatible district context. The knowledge of the first principles of the reform is key to the successful reform effort, because if teachers and administrators don't know why they are changing their practice, the implementation will be merely superficial.

What depth and breadth of content knowledge does a principal need? Would it be more important to have a limited knowledge of many subjects or a great deal of knowledge in one subject? If an administrator knows one subject deeply, Stein and Nelson hypothesize that a principal will be able to "*posthole*" in another subject area. By postholing, the authors hypothesize, that knowledge in one subject area, with knowledge of effective instructional practices and how students learn, a principal can transfer knowledge to another subject matter (Stein & D'Amico, 2000; Stein & Nelson, 2003). Coburn (2005) found that a principal with a

conceptual understanding of mathematics reform was able to “posthole” that understanding of instruction and leadership to reading comprehension. In research that bridges what we know about school leaders’ role in sensemaking with research on school leaders’ content knowledge, one principal had previously developed expertise in mathematics instruction and constructed her understanding of reading instruction based on what she knew about mathematics construction.

Subject Matter Differences in Instructional Leadership

Subject matter understanding is consequential for administrators as it shapes decision-making. Burch and Spillane (2003) found that school administrators view the subjects of mathematics and literacy differently. Leaders were less likely to mention the importance of teacher input in mathematics reforms than in literacy reforms and viewed expertise beyond the school as critical to mathematics reform. School leaders were more likely to mention the value of a teacher’s input in literacy than in mathematics. Literacy was more participatory for school staffs with the expertise residing at the school site. Principals were less prominent in leading math instruction than literacy instruction. School leaders more often attributed improvements in mathematics in schools to use of an established curriculum(Burch & Spillane, 2003). Differences in subject matter specific improvements shouldn’t be over looked and should be considered in order to develop effective instructional reforms.

Critique of Research

From the previous review of the research, we know that the research on instructional leadership is continuing to develop. Correlational studies limit us in our ability to generalize the findings and provide us with a list of behaviors. The mediational paradigms attempt to

demonstrate the influence that a principal has on student outcomes with another list of how a principal influences student outcomes. The paradigm of instructional leaders' interaction with others begins to tell us how a principal influences student learning, but is limited to overt and observable behaviors. It appears that the cognitive frame of how instructional leaders impact their work with improving instruction and learning is an area rich with potential in research in instructional leadership.

At this point, the research in this area is under-theorized and has not linked the relationship between leadership practices and what school leaders need to know about instruction. There is a need for an underlying theory of action of the practices of instructional leadership. There may be agreement as to **what** behaviors make up instructional leadership, but there is little known about the **how** of instructional leadership. Prestine and Nelson state "Unless this theoretical framework is identified and articulated, it seems likely instructional leadership ideas will be fluently employed only by a small minority of practitioners capable of intuiting the larger picture for themselves." (Prestine & Nelson, 2003, p. 7).

Leadership Content Knowledge

There is a new line of research that attempts to rectify the problem of limited understanding of how instructional leaders use their knowledge of instruction, subject matter and leadership to improve teaching and learning. Research on principals' content knowledge demonstrates that content knowledge is important and can influence the work of a principal. We know that principals' content knowledge influences how they observe classroom instruction, work with teachers and structure teacher professional development (Coburn, 2001, 2005; Nelson, 1998; Nelson, Benson, & Reed, 2004; Nelson & Sassi, 2000a, 2000b; Spillane et al., 2002).

When an administrator acts to improve teaching and learning, they use the knowledge that they have about a particular subject. When working with a teacher to improve instruction, the principal takes what they know about the subject matter and effective instructional practices for that subject and what they know about guiding the adult learner (the teacher). This intersection of the three parts of expertise; subject matter, pedagogy and leadership, is a concept defined by Stein and D'Amico (2000) and Stein and Nelson (2003) as *leadership content knowledge*. Leadership content knowledge is when a principal uses knowledge about subject matter, pedagogy and leadership in their role of improving teaching and learning.

The subject of leadership content knowledge is a relatively new one so there has been little research on this topic.

Most of research done in this area has been qualitative. Stein and Nelson (2003) conducted three case studies of instructional leadership - an elementary principal doing classroom observations, an associate superintendent doing a curriculum adoption committee, and a district office designing district-wide mathematics education reform. In this study, all three administrators used knowledge of (a) subject matter, (b) how children learn that subject and (c) how to teach that subject.

The relationship between educators at different levels of the educational system provides a context for identifying and analyzing the knowledge they use in their work. Figure 1 on page 18 shows how educators use leadership content knowledge in their work.

On the left hand side of each oval is the “leader and teacher” and on the right hand side is the “learner”. The teacher of each oval is responsible for teaching the content of his inner oval. For example, in the third oval the principal is the leader responsible for working with teachers to improve their teaching (how to help the teacher be more effective at teaching their students

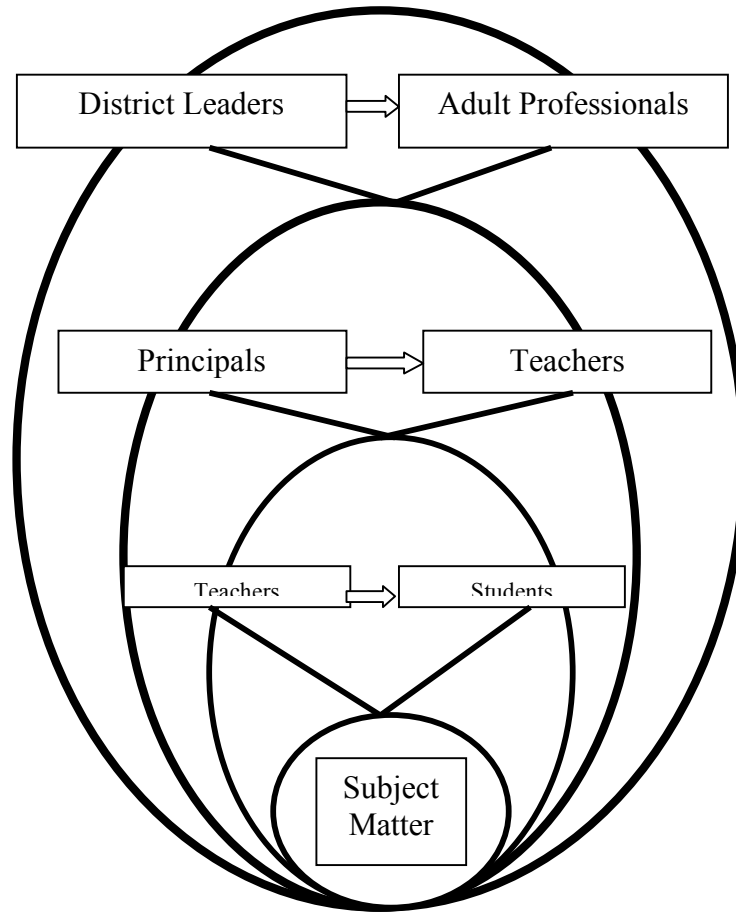
subject matter). Their work will include everything in the inner ovals; subject matter, pedagogy and how students learn. The principal's added responsibility from oval 3 is that they have to know about teachers as learners. The essence of the concept of leadership content knowledge is this intersection of the subject matter and instruction, but also how to work with the teacher so that the teacher learns from the interaction. It is the role of the district leaders in oval 4 to lead the learning of principals and teachers to work together to improve the effectiveness of the teacher's instruction of subject matter to their students. At every level in the organization, administrators need to know about how the other adults in their purview learn so they can best assist others with their learning.

A constructivist view of this learning would be that the principal (or school leaders) is responsible for understanding the learning needs of teachers, arranging interactive opportunities and environments that have the right mix of expertise and appropriate tasks to develop learning, motivating teachers and ensuring adequate resources available (time, money or materials) to support learning. Facilitating learning within an organization is an important dimension of leadership content knowledge. The nested learning community in Figure 1 described by Stein and Nelson (2003) holds the teachers responsible for the learning of students, the principal responsible for the learning of teachers, and district leaders responsible for the learning of principal.

Figure 1

Instructional Content Knowledge: Relationships and Responsibilities among Roles

(Stein and Nelson, 2003)



This research finds that Leadership content knowledge affects a principal's leadership practice in elementary mathematics (Nelson, Benson, & Reed, 2004; Nelson & Sassi, 2000a). Two studies had slightly different, though not conflicting, findings. The quantitative study by Nelson et al. (Nelson, Benson, & Reed, 2004) found that just because principals had strong mathematical content knowledge, they did not always use it in analyzing a classroom scenario

(although the principals with low content knowledge used the knowledge even less). This provides evidence for the importance of leadership content knowledge because it showed that mathematical content knowledge is not enough. One must also know how to leverage that knowledge in their work. Nelson and Sassi (2000) found that the principal who was more familiar with the ideas of the mathematics reform provided more detailed explanations of what learning is, what she sees in a reading classroom and what she wants to do with the teachers. The principal who was less familiar with the reform focused on the process of the teaching, but not the content of teaching strategies. This suggests that leadership content knowledge plays a role in the work of the principal, but we need to know more about how it influences the work of the principal.

While this work in leadership content knowledge is promising, it is yet undeveloped. Several questions still remain. Beginning with the unit of study as the interaction of the principal with teachers to improve instruction is a drastic move in research in the study of instructional leadership. We need to know more about what leadership content knowledge looks like and how leaders use it in their work. Most of the research done on leadership content knowledge has been done in the area of mathematics (Nelson & Sassi, 2005; Nelson, Sassi, & Grant, 2001; Stein & Nelson, 2003). Coburn's work in looking at sensemaking in elementary reading reforms examines how a principal uses knowledge and leadership together (Coburn, 2001, 2005). There is a need for more information on how school leaders use their knowledge and leadership in other school subjects at different levels.

Theoretical Framework for Studying Leadership Content Knowledge

Sensemaking theory can serve as a lens to focus on the study how principals use what they know about teaching, learning and leadership in their administrative practice. Sensemaking is an organizational theory on how people in organizations come to understand situations. An organization or a leader may come to view and understand their work through the lens of what they know about teaching and leadership (Coburn, 2005; McLaughlin & Mitra, 2001; Nelson, Benson, & Reed, 2004; Nelson & Sassi, 2000a, 2000b, 2005; Stein & Nelson, 2003). Principals are in a role where they can help generate reform efforts by the way they see and understand issues and decisions that they face. They play an important role in the sensemaking process of a school and a school district. “Leaders’ contributions to student learning then, depend a great deal on their judicious choice of what parts of their organization to spend time and attention on” (Leithwood, Louis, Anderson, & Wahlstrom, 2004, p. 13).

Understanding and learning happens in organizations through participation in social communities, engagement in meaningful discussions and work and using resources that help participants to deepen their understanding. In thinking of how research and knowledge of teaching and learning can be integrated with leadership, one could begin by examining the organizational theory of sensemaking.

One makes meaning of an event by viewing it through a cognitive frame of references. Those frames include ones integrated set of beliefs and assumptions. Louis (1980) describes sensemaking as a thinking process, which uses retrospection to explain surprises. Sensemaking involves comprehending, making meaning, and understanding. “In coming to make sense of and resolve the unique problems we face in our personal and professional realms, we activate a conception about how the world works and our role within it that is grounded in a set of private inner dialogues formed and transformed over a lifetime” (McGough, 2003, p. 450).

Sensemaking differs from interpretation. Weick (1995) describes the difference as a metaphor of reading and writing a book. Interpretation would be reading a book. “Sensemaking does address how the text is constructed as well as how it is read. Sensemaking is about authoring as well as reading (p.7)”. Interpretation is an element of sensemaking, which requires a context or framework. A key distinction between interpretation and sensemaking is that sensemaking is about the ways people generate what they interpret. Understanding and decision making happen in a social context too but the influence of social context is often overlooked. Sensemaking, as an analytic approach, tries to explain how social context shapes the meaning making process.

Sensemaking happens when and where there is a perceived uncertainty in the environment, an increase in complexity or ambiguity. The substance of sensemaking involves “a frame, a cue, and a connection - with frames tending to be past moments of socialization and cues tending to be present moments of experience” (O’Connell, 1998). One implicitly or explicitly relies on a cognitive frame (a set of beliefs, values or assumptions). These frames act as filters or lenses on how a situation is seen (and from which sense is made).

A principal may make meaning of information and situations through their working knowledge of content knowledge. For example, a principal may shape how one frames the observation of a lesson for the purpose of teacher evaluation based on her understanding of the subject matter or instructional strategies. Research on principals’ content knowledge demonstrates that content knowledge is important and can influence the work of a principal (Nelson & Sassi, 2000b). We know that principal’s content knowledge influences how they observe classroom instruction, work with teachers and structure teacher professional development (Stein & Nelson, 2003). Leadership content knowledge is the “sensemaking” that

occurs when the principal uses the frames of content knowledge, pedagogical knowledge and leadership. In a future study of leadership content knowledge, sensemaking can serve as a theoretical lens.

Conclusions and Needed Research

A review of the research on instructional leadership shows that little is known about how instructional leaders improve teaching and learning. The research does tell us that school principals contribute to student learning indirectly through their influence on other people or on the organization and give us indications on how principals should spend their time. In an overwhelming role with many disparate responsibilities, identifying the specific contributing actions of principals might make the role more manageable. We need to know more about how leadership and instruction interact.

Sensemaking tells us that “the eyes see what the mind knows” meaning that we come to make sense in social organizations through frames based on our assumptions, beliefs and experiences. One of these frames is leadership content knowledge. This triad of subject matter knowledge, pedagogical knowledge and leadership knowledge is an important frame that school principals use to guide their work. The research shows that principals use leadership content knowledge in managing the instructional program. More research is needed in the area of how principals use leadership content knowledge to influence teaching and learning, the essential function of schools. Research suggests the need for administrators to have *subject-matter-specific* professional development to focus and support reform efforts (Coburn, 2005; Stein and D’Amico, 2000). Woody et al. (2004) suggests that the role of the principal should not be underestimated in future policy decisions.

While there is plenty written about the *what* of instructional leadership, more research on *how* school leaders think about their work of improving teaching and learning is needed.

Sensemaking is the organizational theory that a person understands and acts based on a set of frames. The frame explored in this review of literature was leadership content knowledge, the intersection of subject matter knowledge, pedagogical knowledge and leadership. Leadership content knowledge is a relatively new concept, but there has been promising research on how a principal uses leadership content knowledge in his work. This connection of leadership with teaching and learning is an important area for research in schools because it would provide a frame for studying school improvement.

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