Principals’ Cognitive Frameworks in Taiwan

Ming Dih Lin and Sheng Yao Cheng*

*Graduate Institute of Education/Curriculum Studies, National Chung Cheng University, Republic of China

Introduction

Most research studies on principals’ leadership focus on principals’ behavior, character, and other related variables. Although the results of these research studies represent the broad outlines of principals’ leadership, few studies deal with the issues pertaining to how principals actually think in certain education contexts, how principals rethink education circumstances according to their personalities, and how principals recognize contexts, interpersonal reactions, and education institutional missions within their cognitive frameworks (Bolman and Deal 1993).

In school settings, principals have been expected to effectively decode the political environments, to execute the multiple education policies, and to deal with various problems and conflicts inside or outside of their school campuses (Yekovich 1993). Interestingly, principals share a code of ethics similar to medical doctors because both are obligated to think before they act (Bolman and Deal 1993). Due to the responsibilities related to teacher-student interactions and to schooling, principals should first diagnose the fuzzy information from the complicated contexts and then think about possible strategies to face the everyday struggles of their schools. In this vein, factors that influence application of school leadership, practice of school leadership, and influences from school leadership play crucial roles in understanding principalship. It is a pity that most of the literature pays more attention to practices and influences of principals’ leadership but ignores the importance of how principals decode inputs both external and internal to their campuses and their corresponding cognitive frameworks (Lin 2005).

Facing these issues, Zaccaro and Wood (2004) indicate that effective organizational leadership always relates to problem solving, so figuring out the cognitive frameworks that principals use for facing and solving problems becomes a very important approach (Zaccaro and Wood 2004). Firestone and Riehl (2005) support this concept and point out that cognition-oriented research on principals’ leadership is a useful tool for comprehending the mental models of that leadership. Furthermore, Hallinger, Murphy, and Leithwood (1993, p. 167) imply that “a cognitive perspective provides useful information for understanding the nature of expertise in school leadership . . . thinking process of school leaders . . . [and] how expertise in educational leadership develop[s].” Moreover, Bolman and Deal (1993) also emphasize that those researchers of principals’ leadership should adopt cognitive psychology in unfolding the thinking models of principals and how they deal with their daily practice in school.

However, Bolman and Deal (1993) discover that even using cognition-oriented approaches, researchers on principals’ leadership still focus more on solving problems and making decisions, ignoring the importance of finding problems, framing problems, unfolding interpersonal relationships, and understanding meaning.

When we reviewed the related literature on principals’ leadership in Taiwan, we discovered our research to have very similar findings (Din 2005; Cheng 2006; Lin 2005). To answer the debate on principals’ leadership, first we analyze the findings related to principals’ cognitive frameworks, including their approaches to contexts of cognitive leadership, principals’ decoding of the contexts of schooling, and the cognitive framework of their leadership. Second, in 2006, we conducted group interviews with 80 elementary school principals in Taiwan to discuss the process of solving conflicts between school administrators and teachers. Specifically, the research question of this article is to find out what cognitive frameworks are used by elementary principals in Taiwan when they deal with conflicts between school administrators and teachers.
Related Literature

To figure out the theories and studies related principals’ cognitive frameworks, we collected and analyzed it through a cognition-oriented approach to educational leadership, decoding the contexts of schools from the principals’ viewpoint and highlighting the principals’ cognitive framework.

Cognition-Oriented Approach to Education Leadership

How principals think will influence how they deal with problems (Hallinger, et al. 1993; Leithwood and Steinbach 1993). In other words, in facing the same problems, different principals will have different understanding, cognition, and strategies. This is the central research emphasis of the cognition-oriented approach to education leadership. Cuban (1993) points that merely mentioning that principals’ behaviors come from their thinking is too simplified of an approach; such a statement neglects the complication and dynamics of principals’ leadership and should be discussed more. According to Prestine (1993), school leadership will interrelate to knowledge and how to use knowledge to deal with the problem under the context of schooling, and it highly correlates to situated cognition, so how to interpret the context of schooling, principals’ thinking, and the dynamics between thinking and action become crucial issues (Bolman and Deal 1993).

To the content of cognition-oriented approach on education leadership, Leithwood and colleagues (1993) state that four problems should be regarded as the central parts of the discoveries: What are problems? What is the meaning of professional knowledge? How does the cognition-oriented approach deal with the problems? How does expertise on problem solving develop? On the other hand, Prestine and Nelson (2005) support the idea that we should combine constructivism and a cognition-oriented approach to research the issue on educational leadership.

In sum, a cognition-oriented approach of research on principals’ leadership inquires how principals decode their daily practices in schools—for instance, working environment and interpersonal relationships—and how they act according to their thinking. Moreover, this approach attempts to combine research related to students’ learning, teachers’ teaching and thinking, and principals’ leadership.

Decoding the Contexts within School

The contexts within school that principals face every day are the elements around campus that have the potential to affect the organization (Goldring 1995) (Goldring 1995). According to Hoy and Miskel (2001), schools fall within the context of community. Due to the high rate of interaction between schools and their environments, principals should pay more attention to resources, policies, uniqueness, and community limitations. Basing her theories on those of open social systems, Goldring (1995) outlines the environmental map of organizations using the context of schooling to interpret the role and mission of principals. She notes that there are boundaries between schools and their environments and that the environments of schools can be divided into the general environment and the specific environment. The characteristics of the specific environment include volatility, capacity, clustering, and complexity. Along with these characteristics, schools face different kinds of uncertainty. Depending on the situation, principals play a crucial role in thinking through the uncertainties of the environment and adopting the proper strategies in balancing autonomy with dependence.

In the Taiwan context, there are increasing complexities and changes in education organizations (Chin, 1997). First, various interrelated committees are set up, including the teachers’ union, the curriculum development committee, and the textbook selection committee; the policies around these committees put principals in a position such that they need to implement distributed leadership (i.e., to share their authority with their colleagues) (Gronn 2002; Lin 2005). Second, parental involvement represents a growing power in almost all the decision-making processes (Lin 2002b). Third, principals are agents of educational changes (Bransford 1993; Lin 2002a; Stein and Nelson 2003), and they are regarded as having to focus on the teaching profession. However, the critical elements of these concerns rely on
the principals’ being aware of the contexts of their work.

As a result, we conclude that internal and external contexts, the principal’s cognitive processes, and the principal’s context management strategies are the three dimensions of a principal’s cognitive framework. This is demonstrated in Figure 1.

FIGURE 1. A Principal’s Cognitive Framework and Related Variables

As shown in Figure 1, we can tell that the result of a principal’s cognitive framework (including context awareness) will correspond to their actions in environmental management strategies. Therefore, a study on principals’ interpretations of context and role awareness, in terms of principals’ cognitive frameworks, will contribute to research on the cognition-oriented approach of principals’ leadership (Inbar 1995; Walker, Bridges, and Chan 1996; Wirt and Krug 1998; Nir 2001). Furthermore, Firestone and Shipps (2005, p. 81) decode the meaning of “accountability” within the politics, bureaucracy, market, morality, and profession of principals, pointing out the struggles they face every day.

Meanwhile, Eden (1998) conducts research on the paradox of principals’ cognitive and corresponsive strategies in Israel. According to their awareness about and decoding of their environmental contexts, principals tend to discover what they expect to find. Because the environment that principals face every day is rapid and changeable (Hallinger, et al. 1993), it is essential to know what issues receive more of their attention. In this regard, research on cognition-oriented approaches could help outline the environmental decoding of principals’ daily activities. Meanwhile, Kerchner (1993) points out the importance of decision making in the educational system and the role principals play in the daily interaction between the systems, the campuses, and the communities. He continues by pointing out that the central element of successful principalship is the taking of small things and trying to connect the daily routine of their schools to their grand visions of educational development. Moreover, principals—novice and expert—should “understand the strategic importance of daily life, the connection between the smallest individual activity and the grand external mandate, and the importance of moving decisions between one domain and another.” (Kerchner 1993, p. 18).

In regard to the reference frameworks used by principals in interpreting their environments, Bolman and Deal (1997) have implemented the concept of organizations’ multiple realities to form four different frameworks. They outline that principals will use the structural, human resources, political, and symbolic frameworks to interpret their environments. Similarly, Hoy and Miskel (2001) analyze their social system model in light of these four frameworks. Further, Dimmock and Walker (1997) transfer this four framework idea to analyze the influence of principals’ awareness of educational policies, school management, curriculum, and pedagogy under the uncertainty of society and politics during Hong Kong’s return. Moreover, Dimmock (1999a, 1999b) has attempted research on the dilemma that principals face in regard to these four dimensions. Along these lines, we interpret principals’ cognitive frameworks through their environmental awareness and follow the theory of Bolman and Deal’s (1993, 1997) four frameworks.

As a result, we find that principals decode the changeable and complicated environment—including school and community interaction—and use their cognitive framework in interpreting their environmental awareness. They then format their scheme to deal with internal and external conflicts and struggles.
Principals’ Cognitive Framework

To figure out the framework of principals’ leadership and thinking, we need to discuss the meaning of the processes and contents of principals’ thinking first. Following that, we will examine the details of principals’ cognitive framework.

Processes and Contents of Principals’ Thinking

The cognitive process of principals’ leadership is very complicated. Zaccaro and Wood (2004) juxtapose this cognitive process with problem solving and point out several similarities between them. These similarities include problem definition, strategies creation, strategies evaluation and selection, strategies implementation, and result evaluation. The same study finds that the processes of principals’ thinking and of their problem solving are very similar. Furthermore, Leithwood and Steinbach (1993) stress that there are six important elements in the process of problem solving and principals’ leadership. These elements are interpretations, goals, principles and values, limitations, processes of problem solving, and emotions.

Interpretations refers to principals’ understanding of the nature of the problems. Goals relates to the relative immediate purposes that principals want to achieve. Principles and values indicates the relative long term goals and operation rules, ethics, and values. Limitations is pointed to find acceptable problem solving strategies under certain obstacle or barrier. Processes of problem solving refers to the actions based on the problem, rules, and goals that principals interpret. Emotion indicates how principals feel during these problem solving processes.

In this vein, the major aspects of principals’ thinking include problem interpretation, goal finding, rules based on values, obstacle and barrier understanding, problem-solving strategies implementation, and related emotions. Yekovich (1993) agrees that these aspects can on the one hand help principals solve the problem, and on the other hand help them learn professional knowledge, cognitive skills, and reasoning and thinking in certain problem solving contexts.

The Details of Principals’ Cognitive Framework

Principals’ cognitive frameworks are similar to the frameworks that principals adopt to interpret their environment and to solve problems. As noted previously, many references are in support of principals’ tendency to discover the strategies that they expect to find (Bolman and Deal, 1993; Glidewell, 1993). This tendency is one of the crucial reasons that principals tend to use their preferred cognitive frameworks. Bolman and Deal (1993) express that terms related to cognitive frameworks include cognitive structures, schema, cognitive maps, and paradigms. Moreover, Glidewell’s (1993) work expands on these interpretations and stresses the importance of cognitive models, emphasizing that ideas, value, motivation, and feeling will influence an individual’s problem solving. According to Allison and Allison (1993), the definition of cognitive framework is a framework that people use to categorize other people, things around them, and their experience.

Another idea similar to cognitive framework is that of cognitive structure. Theories of cognitive structure indicate that people use organizational information to solve a problem. Such structure helps people be aware of the environmental contexts of their problems, the information systems, and other related elements. Furthermore, it helps people format the direction of their initial action. Zaccaro and Wood (2004) point out that cognitive structure covers three functions: description, interpretation, and prediction. In other words, their cognitive structure can help people to interpret their contexts, aspirations, and predictions, and to integrate new information technology to their current cognitive structure as it relates to problem solving. Glidewell (1993) argues that the more accurate a principal’s cognitive structure is, the more efficient his or her problem solving is. As a result, understanding the cognitive structure of principals’ leadership helps assist with principals’ professional development. In this study, we use the term cognitive framework to outline the concepts shared between “cognitive structure,” “scheme,” “cognitive map,” and “paradigm.”

Zaccaro and Wood (2004) have figured out differences between the cognitive structures of novice and expert principals. Expert principals normally have sev-
eral characteristics: more information categories, more information in any one category, accurate discrimination of concepts and elements, and accurate understanding of systematic operation. Furthermore, expert principals tend to create different kinds of connections between problems, strategies, and outcomes, so mostly they perform well. Zaccaro and Wood continue by showing that this cognitive structure can reduce barriers during the processes of defining problems, forming strategies, evaluating and selecting strategies, and reviewing strategies. For instance, the dominate structure of principals’ cognitive framework will influence how principals interpret their environmental contexts, define problems, find potential strategies, and evaluate these potential strategies.

On the issue of typology, Zaccaro and Wood indicate that there generally are three cognitive structures of leaders: the leader’s team and unit, his or her operating environment, and the strategic plan and vision. The first cognitive structure (team and unit) is the information that leaders and their team can operate and also how they run it. Taking the school setting as an example, teaching, guidance, discipline, and miscellanea could be the team cognitive structure that the principals have. The second cognitive structure (operating environment) is the information of the organization’s features and the key elements of those features that the leaders own. For instance, regulating the allocation of positions, structuring communication, and operating the administration in the school setting can be regarded as part of the operating environments. Finally, the cognitive structure of the strategic plan and vision refers to how leaders see beyond the team and operating environment to format the organizational plan and vision for the school.

In this study, we apply Bolman and Deal’s (1993, 1997) cognitive frameworks to principals, those of structure, human resources, politics, and symbolic units. The structural cognitive framework emphasizes the division of role and responsibility, the adoption of organization structure, and the design of the organizational flow chart. Human resources tends to cover the meaning of interpersonal relationships, the satisfaction of members’ demands, and reinforcement of the encouragement. The political cognitive framework emphasizes use of limited resources, multiple values, alliances, and negotiation. Finally, the symbolic cognitive framework keeps an eye on the meaning of behavior, traditional values, and the importance of culture. Using this background, the authors will interpret the issue of principals’ thinking in light of their cognitive framework, which consists of structure, human resources, politics, and symbolic units.

Research Design

In 2006, the authors conducted a study of eighty elementary school principals through analyzing team-work discussions about how the principals would solve a problem in a school setting. The authors analyzed the potential cognitive frameworks these principals used during the problem solving process. To answer that question of potential cognitive frameworks, we used multiple case studies and decoded the context of the principals’ problem posing and solving process.

The researchers invited 80 principals to participate this study by way of a professional development seminar for principals. We divided the 80 principals into 14 groups of five-to-six principals per group. This study focused on the contexts that principals propose for solving the problem provided by the authors. The authors provided this problem: Assume that when one vice principal tries to promote some new educational changes, there are conflicts between school administration and teachers as a result. Moreover, due to a possible adjustment of the school’s position and mission, there might be some struggle between school members. Further, if the principal doesn’t pay much attention to this conflict, it may be advertised on TV or other public media.

In analyzing the data, we apply the four cognitive frameworks previously mentioned—structure, human resources, politics, and symbolic units—to decode the discussions among principals. For instance, if principals hope to arrange a meeting with the vice principal and a teacher to discuss how to deal with the issues, we decode this as being the use of a structural cognitive framework, which refers to role mission and organizational communication. If the principal tends to appreciate the vice principal’s hard work, we decode it as a human resources cognitive framework. Moreover, if the
principal prefers not to cause too much negative influence on the school, we decode it as a political cognitive framework. Lastly, if the principal indicates an “all for one and one for all” philosophy, we tend to decode it as a symbolic or cultural cognitive framework.

Discussion and Analysis

According to the responses from the 80 principals, we made several findings. Among these we found that structural and human resources cognitive frameworks are those most commonly adopted by principals in this situation; that the symbolic cognitive framework appears less; that most of the responses indicate use of two or more cognitive frameworks; and that the positional authority of principals is prominent.

Most Commonly Adopted Cognitive Frameworks

When we review the problem solving process of these 80 principals, we discover that most of the principals emphasized the importance of roles and division of responsibility, organizational communication, structural adjustments, and the design of organization flow chart to balance the struggle. We decode these tendencies as belonging to the structural cognitive framework. Another important cognitive framework, the human resources framework, stresses the strength of interpersonal relationship, satisfaction of member’s demands, and the encouragement and reinforcement in people’s problem solving. For example, one group of principals would like to encourage the vice principal and teachers to meet with each other and discuss the details of the school’s mission, operation, and evaluation, indicating an approach via the structural cognitive framework. In other instances, the principal would appreciate the vice principal’s contribution to the school, emphasizing the hard work of the vice principal, which approach is that of the human resources framework.

Symbolic Cognitive Framework Seldom Appears

The symbolic cognitive framework refers to emphasizing the importance of the meaning of the organization and its members, the traditional values of the school, and the school’s culture. Only one or two groups out of the 14 responded that both the vice principal and teachers care about the development of the school (an “all-for-one” approach). These principals tried to outline the invisible meaning behind the conflict between vice principal and teachers, hoping that their school would not be disturbed by the small obstacle and their colleagues wouldn’t ignore the possibility of organizational visions.

Most Responses Cover More Than Two Cognitive Frameworks

According to these fourteen groups’ responses, we decode that at least 10 groups include two or more cognitive frameworks in their responses. Among these combinations, that of structural frameworks with human resources frameworks occurred most frequently. For instance, one group of principals’ responded by suggesting that they would ask how their vice principal felt after the school administration meeting last week (which we decode as reflecting the human resources cognitive framework); that they would consider how to encourage the principal, vice principal, and teacher to meet together to discuss implementing the coming educational changes (which we decode as reflecting the structural cognitive framework); and that they would determine how to interpret the reasons behind a teacher’s resistance (which we decode as reflecting the human resources cognitive framework).

The Prominence of Principals’ Positional Authority

Along with the initial findings related to principals’ cognitive frameworks, the researchers also discovered that several principals pretend to play a role as a vice principal and answer the questions covered by the following sentences: “I will obey the principal’s advice” and “Principal, please help us deal with this.” In this vein, the principal of an elementary school in Taiwan seems play a role as judge. However, what is the real meaning of the word judge? How do principals to serve as a judge? More research is necessary to answer these questions. However, the authors certainly outlined the positional authority of principals in the elementary
school setting in Taiwan. This outline will help principals deal with such struggles. Nevertheless, questions about whether all the member of the school would agree on this treatment and whether such a strategy would really help the school’s mission need more research before being conclusive.

Conclusion

Because most of the current research on principalship focuses on their behaviors, character, and related variables, this study’s purpose is to investigate the cognitive frameworks of principals in the elementary school setting in Taiwan and to figure out the current usage of various cognitive frameworks by those principals. To understand the principals’ leadership, scholars tend to outline the factors that influence school leadership (including outside influence and psychological process), practices of school leadership (including actions of school leaders, classroom, and schooling), and influences of the school’s leadership itself (including influences to students and staff).

The authors examine the principals’ cognitive frameworks through a cognition-oriented approach to educational leadership, decoding the context of school, the processes and contents of principals’ leadership, and the principals’ own thinking. Most of the cognitive framework of principals and the related variables cover three dimensions: the internal and external contexts, the cognitive frameworks and processes of principals, and the principals’ strategies for environmental management. After reviewing several sets of literature related cognitive frameworks, along with research findings on cognitive structures, cognitive maps, schemes, and paradigms, the researchers applied the theory from Bolman and Deal’s (1993, 1997) cognitive frameworks: structure, human resources, political, and cultural symbolic units to analyze the leadership model within the problem solving process.

In this vein, the authors conducted a multiple case study in 2006 by way of a seminar on professional development that consisted of 80 elementary school principals. After they divided these 80 principals into 14 groups, they asked these groups to discuss some conflicts that happened in the daily school setting in Taiwan. As a result of the quantitative decoding analysis, we concluded that structural and human resources cognitive frameworks are most common cognitive frameworks that principals use to interpret conflicts in school; that the symbolic cognitive framework appears less; that most of the responses indicate the use of two or more cognitive frameworks; and that the positional authority of principals is prominent.

References


New York: Teachers College Press.