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ABSTRACT

This paper presents findings of a study that explored ways in which educators used reflective practices for administrative problem solving. Specifically, the study explored the ways in which administrators used a cognitive-coaching framework to guide their thinking and contributed to their practical wisdom through structured reflection of their past experiences. In June 1990, 55 school administrators from school districts across the United States and Canada participated in a 4-day Cognitive Coaching Leadership Training program. Data were derived from analysis of 17 participants' self-reports, in which they reconstructed a supervisory event, generated a cyclical self-conversation to examine their thinking, and recreated new meanings of those experiences. Findings suggest that reflective practice is greatly enhanced when based on a rich and specific framework. Participants reported that they frequently used the tools of paraphrasing and questioning, valued the building of rapport and trust in the supervisor-teacher relationship, improved their collaborative practices, and utilized the maps of the cognitive coaching model as a filter for viewing interaction. Two tables are included. (LMI)

Transforming Information into Knowledge: Structured Reflection in Administrative Practice

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In his book, *Educating the Reflective Practitioner*, Donald Schon (1987) asks these fundamental questions:

> When the practitioner takes seriously the uniqueness of the present situation, how does he make use of the experience he has accumulated in his earlier practice? When he cannot apply familiar categories of theory or technique, how does he bring prior knowledge to bear on the invention of new frames, theories, and strategies of action? (p. 65)

This paper addresses Schon's question by analyzing the self reports of seventeen school administrators who completed a structured task protocol which required that they reconstruct a supervisory event and generate a cyclical self-conversation to examine their thinking and make new meaning of their experience. The purpose of this paper is to explore the ways in which these educators employed a specific framework to guide their thinking, and create and add to their practical wisdom through structured reflection on their past experience. The study raises the importance of reflective practice for administrative problem-solving and continued professional development, as well as its potency for promoting inquiry-oriented, reflective instructional practice. It considers the effectiveness of an internalized set of structures for guiding reflection. The work concludes with implications for changes in administrative preparation and skill development and offers suggestions for further study.

Theoretical Framework

Reflective Practice

Reflective practice, and the development of reflective practitioners has enjoyed a great deal of attention in the recent literature. Debates, discussions and definitions abound. From this plethora of literature about reflective practice two defining elements have emerged which are most relevant to this study; reflection involves the reconstruction of experience (McKennon & Erickson, 1988; Grimmett, 1988) and personal reflection on one's own experience is a relevant and important method for improving subsequent action and building a repertoire of professional knowledge (Schon, 1983, 1987; Kilbourn, 1988).

Reflection is a specialized form of thinking, arising from perplexity about a direct experience, and leading to purposeful inquiry and problem-resolution (Dewey, 1933). This notion of exploratory experimentation requires a cycle of inquiry and reflection. The practitioner is defined as a builder of repertoire, rather than a collector of procedures and methods (Schon, 1988). Schon (1987) describes this cycle.

> It is initiated by the perception of something troubling, or promising, and it is determined by the production of changes one finds on the whole satisfactory or by the discovery of new features which give the situation new meaning and change the nature of the questions to be explored (p. 151).

The study of reflective practice is concerned with understanding this cyclical process through which educators recognize doubt or uncertainty, draw inferences based on previous experiences, choose a course of action and finally test their inferences and choices through further reflection (Grimmett & Erickson, 1988; Schon, 1983). This paper presents the participants' interpretive accounts of a self-selected event in which they exercised their cognitive coaching skills with a specific outcome in mind. It presents an analysis of these self-reports through the lens of the cognitive coaching framework, and describes the level of use and conceptual understandings of each participant as they reflect on their problem identification and problem-solving process.

In this study, reflection is defined as the reconstruction of experience which involves recasting the situation as a result of clarifying questions, reconsidering assumptions, and generating a wider range of alternative responses or actions. This reconstruction of experience is subjective, based on the individual's perceptions and self-view. It is also contextual, based on the institutional culture and the variables involved with the specific event. Thus, this paper is based on an analysis of the subjective interpretations of the participants, not the validity of their interpretations.

> . . .the primary source of validity in the propositions produced as results, must lie not in their validity as statistical generalizations...but in the extent to which practitioners who reflect-in-action in the light of them are able to use them to design effective interventions, confirm action-oriented hypothesis, or gain new insights into the phenomena of practice" (Schon, 1988, p. 28).

The Cognitive Coaching Framework

Reflection, as defined, is contingent upon identification of problematic features in a setting or event. Cognitive coaching (Costa & Garmston, in press) offers a model, or framework, which both promotes and serves as a guide for reflection. The cognitive coaching model is based upon the assumptions that 1) the non-routine and complex nature of teaching requires constant contextual decision-making, 2) all behavior is directed by our individual and subjective perceptions, 3) to skillfully change behavior requires a change in perception, and 4) effective coaching mediates the perceptual changes which promote behavioral changes towards more effective practice. Coaching facilitates a practitioner's ability to reframe an experience given their "existing repertoire of examples, images, understandings, and actions" (Schon, 1988, p. 25) and

transform the experience so that their particular experience is seen as only one of many possible versions. Coaching widens the professional possibilities for exploration and experimentation by enhancing the ability to reframe and reexamine familiar patterns of practice and reconsider underlying assumptions which direct action.

The three fundamental goals of cognitive coaching are 1) establishing and maintaining trust, 2) facilitating learning and 3) enhancing growth towards cognitive autonomy. Cognitive autonomy is expressed as a high level of resourcefulness in five states of mind; efficacy, flexibility, precision, consciousness and interdependence. (see Table 1: Five Autonomous States of Mind). These states of mind, and their associated behaviors, are transitory, transforming and transformational. For example, an individual may be highly efficacious, and have a strong locus of control, in one situation and be less so in another. Or one may be extremely flexible as an elementary principal, however, if moved to high school administration there may be, temporarily, a decrease in resourcefulness in that state of mind. Skillful coaches can recognize temporary 'stuckness' and facilitate resourcefulness. To do so, they must themselves be highly autonomous.

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insert Table 1 about here

To achieve these goals, cognitive coaches employ a specific set of strategies designed to enhance an individual's inner thought process, thereby effecting their overt behaviors towards improved professional practice, and ultimately increasing their capacity for critically self-reflective practice. The cognitive coaching model is predicated upon a set of maps and tools, which, when combined with a non-judgemental way of being and working with others, invites the shaping and reshaping of thinking and problem solving capacities - - for the coach and those being coached. Integral to this model is the ability to work effectively with one's self and others across style differences and philosophical preferences.

Instruction in the philosophical underpinnings and the fundamental strategies of cognitive coaching is offered in a six days of training. During this time, participants learn and practice the maps and tools of the cognitive coaching model (See Table 2: Cognitive Coaching Maps and Tools). The first two days are devoted to tools for establishing and maintaining trust. Trust is described in four key areas; trust in yourself, trust in a coaching relationship, trust in the coaching process and trust in the organizational environment to provide continued support while evolving towards a collaborative, self-renewing culture. The elements of rapport; posture, gesture, language, tonality and breathing become important tools for building and maintaining trust in the moment; particularly in the event of tension, miscommunication or anticipated difficulty.

To achieve the goal of learning, the coaching process incorporates the applications of the basic principles of knowledge construction suggested by Jerome Bruner, Jean Piaget and Hilda

Taba, the adult learning theories of Malcolm Knowles; human developmental sequences based upon the work of Jean Piaget, Lawrence Kohlberg, Frances Fuller, Eric Erickson; and the mediational theories of Reuven Feuerstein. Based on the work of these theorists, on days three and four, participants learn a set of linguistic tools; questioning skills which incorporate the use of syntax and positive presuppositions to promote thinking and response behaviors including using wait time, paraphrasing, clarifying and probing for specificity.

Insert Table 2 about here

The final two days of training focus on synthesizing the previously learned concepts and skills, and expanding the coach's repertoire of language choices when mediating toward more autonomous states of mind, as described in Table 1: Autonomous States of Mind.

The cognitive coaching process encourages and supports individuals and organizations as they stretch beyond their present capacity and become self-monitoring, self-renewing entities. Incorporated in the process are an appreciation for diversity, an ability to facilitate communication to promote growth, a repertoire of linguistic tools and a commitment to reflective practice. An autonomous practitioner who is guided by the particular maps and tools of the model will be able to transform individual experience and create new understandings for improved professional practice, their own as well as those with whom they work.

Focus of This Study

Methods/ Data Source

In June, 1992, fifty-five educators from school districts throughout the United States and Canada attended four days of Cognitive Coaching Leadership Training in Lake Tahoe, California. Each of these individuals had participated in at least six days of training in the cognitive coaching model (as described above) within the last two years, and had had the opportunity to practice their developing skills at their school sites. The cognitive coaching model is designed to enhance the complex decision-making and problem solving capabilities of both teachers and administrators, as a result of their coaching and/or supervisory interactions (Costa & Garmston, 1985). Therefore, it was determined that these individuals would be most appropriate for this study.

The cognitive coaching model provides specific templates, such as the planning and reflecting conference maps, which are designed to promote reflective practice. Explicit, structured dialog is among the recommended practice for integrating metacognitive strategies designed to lead to the internalization of reflective thinking include. Additional instructional practices include; guided self-

questioning to mentally rehearse new strategies, informed training or sharing the rationale upon which the strategies are based, and instruction in self-monitoring for the effective use of the strategies (Palinscar, 1986; Pugach & Johnson, 1990). These practices were integral to the design of the cognitive coaching training received by the participants.

Seventeen members of this group volunteered to participate in this study. Their professional roles included central office personnel (school district Superintendents, Assistant Superintendents, Directors of Staff Development) and building level administrators (Principals, Assistant Principals) Each volunteer was asked to complete a structured task protocol in order to articulate learnings gleaned from their reconstruction of a self-selected experience and construction of meaning as analyzed through the lens of cognitive coaching. Specifically, participants were directed to respond in writing to five questions designed to promote self-dialog as a reflective conversation. (see Appendix I: Structured protocol) These questions were designed to explore the participants' reflection-in-action through reflection-on-action (Schon, 1987) and to enable them to extrapolate generalizations about their practice which could be applied to future experiences.

Guiding Questions

The focus of this paper is an exploration of whether, and to what extent, a specific framework, in this case Cognitive Coaching, will enhance the capacity and effectiveness of reflective practice. Several key questions provided a lens for viewing the data.

1. In what ways, and to what degree was the 'language' of cognitive coaching expressed in the internal dialogues of the participants?

2. In what ways were the cognitive coaching maps and tools employed to guide in-the-moment decision making, and/ or to guide further action? Which maps and tools were used predominantly?

3. In what ways was the notion of developing practical knowledge as a cyclical, evolving process expressed in the participants' responses?

4. Did the participants' accounts offer new or multiple perspectives for interpreting events?

5. Did the responses suggest the transfer of newly evolving understandings to other situations and contexts?

Discussion

Findings

It is not surprising, given the participant sample, that 15 of the 17 participants referred specifically to the use of cognitive coaching maps and tools as they reflected on their own

internal dialogue and described their observations of their colleague and the situation. However, it is interesting to note that the language used in the various "retellings" consistently reflects clarity regarding conscious choices which were made based on these observations.

> Because Mrs. K was so visual and kinesthetic, I decided to match her language, both verbal and non-verbal. (M.H.)

> I was trying to be conscious of making positive presuppositions in an effort to lead him to exploring new strategies and techniques. What I was very aware of was his response to those presuppositions. I observed his eye contact, open and erect posture, longer pauses before he responded. (J.A.S.)

> I found that I had to decide which direction I would take to ask questions that would determine if he reached his objective. I kept feeling the importance of him receiving my undivided attention - that I maintain eye contact, lean in, and catch every word so that I could accurately paraphrase. I felt his resistance begin to drop (D.S.)

> I listened reflectively; I avoided judging or advising. I used mirroring. I watched her eye movements. I avoided (negative) presuppositions. (J.E.)

> I remained relaxed, leaning forward, hands under my chin even when he began defending his outburst. I smiled and nodded as he developed his plan and matched him as he energized and became excited again. In my head, I just kept trying to phrase the lead in such a way that would get him to generate his own alternatives. (K.G.)

> I remember consciously fighting back the need to be directive and watched her behaviors, eye shifts and body language. (D.H.)

> I mostly during this time was working on my paraphrasing skills for clarity and specificity. I was working hard on not being judgmental or giving my opinion or jumping to conclusions. . . I was also trying to get to the next level of having them figure out how to solve the problem - - not me. (C.B.)

Most prevalent among those strategies and skills mentioned were the linguistic tools of paraphrase and pace and lead; and the elements of rapport (posture, gesture, tonality, language, and breathing). Apparent in the responses, as well, was an awareness of the five states of mind.

> When she came in that morning, she was visibly angry. My instinct was to pace and lead her. I matched her intensity, got her to lower her high pitched voice and was able to dissolve her anger. . . . I remember thinking that if I quietly reflected on the five states of mind, I could identify where Kathy was and begin there. (M.H.)

> I found myself very conscious of pace, lead, body and spoken language and of the five states of mind. (J.S.)
>
> The teacher felt powerless (efficacy) and out of options (flexibility). He had never clearly spelled out expectations (precision) and he couldn't understand why nothing was working (consciousness). (K.G.)
>
> The power of paraphrasing was unbelievable. The power was that I didn't have to be the decision maker (except in my choice to deliberately use these skills). They were the decision makers. (C.B)

Participants recognized their own awkwardness with the complexities of the coaching model, frequently identifying specific goals for growth.

> I'm struggling with whether or not I move too quickly with some and not quickly enough with others and how I can present goals and practices in a way that would provide a supportive direction. Perhaps, - no not perhaps - but rather, I feel my use of the pace and lead will help me with this. (J. A. S.)
>
> My internal dialog, I must admit, was clumsy at the time. It had been only a month or so since training and everything had an element of being forced to consciousness. I had to mentally visualize the 5 states of mind model, I had to closely monitor his movements and language and I felt clumsy with questions selection (particularly attempting to avoid why questions). (J.S.)
>
> I think I made some good choices of comments to pursue, I'm sure I missed some. I was very concerned about if I was asking the right questions at the right time, and I am still concerned about that. (D.S.)

There were also frequent references to the positive results of the experience(s) connected to specific maps and tools.

> Coaching influenced this process with this teacher in helping my communication with him - in my use of presuppositions that resulted in his reflection and in developing an internal dialogue within me that makes me constantly reflect on my own attitudes and practices. (J.A.S.)
>
> All of my experiences weren't this 'elegant' - - but this one showed me how unbelievably powerful the paraphrase is - - and how the pace and lead moved a teacher from an undesirable state to a desired state. (K.G.)
>
> As I would coach [the teacher] my mind was on paraphrasing, probing and building rapport. . . I can't help but believe that what I learned on building

> rapport opened doors for a long lasting relationship between two colleagues. What a fabulous experience! (R.H.)

Through this opportunity to reflect, respondents recognized a cycle of growth. They could recognize and describe their own progress from their initial experiences to the present time.

> I realize how elemental a level I was dealing on, yet that first step was invaluable. Now I can look back on it at the beginning of a very important experiential sequence; a sequence that won't have an ending and one that will have myriads of feedback loops. I now feel that I'm in an ever increasing spiral. I like that. (J.S.)

> Cognitive coaching has been instrumental in assisting me in internalizing a process for looking inside while I act outside. Now, in any relationship, I run through a list of questions, behaviors, look at what I'm saying, doing. Sometimes I fall into former patterns of behavior, but now consciously catch myself and am able to adjust to the person or situation. (D.H.)

> Throughout this experience I had an on-going dialog within myself about the types of questions I was asking, the progress she was making as a result of our coaching experiences. I also kept reflecting on my post-conference questions. Working with her weekly was a real time commitment for both of us, so it was important that it made a difference. (R.H.)

> One of my shortcomings has been a tendency to react emotionally to statements instead of looking for real meaning. This experience illustrates to me the growth I have experienced toward becoming an active listener. In reviewing the conversation, I see that I elicited the solution instead of providing it. (T.H.)

> My initial encounters were rugged, flawed and clumsy. However, as the year progressed, I was able to separate and employ the process while watching the relationship develop. I can monitor the evolving relationship while directing its growth. (D.H.)

> The coaching experience has really caused me to [keep a] journal and reflect. That is the piece that continues to help me grow. (M.H.)

Next steps were identified by the participants, both for their own skill development as cognitive coaches, and for their continued professional interactions.

> I was able to use some of my skills - paraphrasing, probing, pace and lead - which indicates that they are becoming internalized and automatic. I will continue to practice and apply these skills - their benefit is evident in

> positive situations. I want them to become more automatic so they will be beneficial in high stress situations. (J.T.)
>
> I have to keep reminding myself - 'I am coaching the person, not the lesson'. . . . How do I keep pushing the edge and keep building repertoire for questions and events that you can not plan for? (B.S.)

Recognition of mutual growth and change was frequently reported.

> It was an exciting, thought provoking semester for both of us. [The teacher] learned she was in charge of her own destiny. I learned how to become a more effective cognitive coach and develop my paraphrasing, probing and rapport building skills. (R.H.)

Respondents also recognized the importance of coaching as a reflective process for their entire staff.

> Now I'm asking myself different questions. How can some of the tools of cognitive coaching be implemented school-wide? Which tools would be most valuable initially? (T.H.)
>
> I continue to develop and use these skills as I work with administrators and teachers. I ask myself, 'how can we get more teachers involved, willing to take the risks so they can grow professionally? (R.H.)
>
> Staff [members] really want to talk about their issues and want someone to care. Deep personal requests gain movement for staff. . . [I am recognizing] the power of collegiality, the power of self-assessment by a staff member, the power of the cognitive coaching model and the power of trust. Individual growth comes from mediational behavior. (B.S.)

Many of the responses included side notes expressing appreciation for the opportunity to reflect on their experience, and commenting on its usefulness.

> This experience was very difficult in that so much came back so fast it was very difficult capturing it in words. However, the process of attempting to organize it into words is very powerful. Thanks for the opportunity. (J.S.)
>
> This is a super way to bring about reflection on specific incidents - I've played a few other scripts through my mind as a result. (T.H.)

Significantly, participants recognized the necessity for overcoming their own concerns and taking risks.

> I have decided to risk and do it. In big situations and small situation I have seen it work. (M.H.)
>
> There is no non-risky way to do this. As a coach, attending to the person is paramount. (B.S.)

Analysis

The data indicate that training in the cognitive coaching model provided a framework for participants' reflection which increased their repertoire of choices and informed their actions, before, during and after the specific incident. Participants' reports indicated an increasing comfort with specific tools of cognitive coaching. They clearly identified and expressed value for specific tools and for the cognitive coaching process. The linguistic tools of paraphrase, questioning to promote higher levels of thought and response behaviors which build rapport and communicate positive expectations were identified as most frequently used. These reports on the importance of rapport confirm other work regarding trust and the supervisory-teacher relationship (see for example Hoy & Kupersmith, 1984). The importance of the supervisor's ability to establish a trusting supervisor-teacher relationship has been described as "rapport nurturance. . . a continual, conscious process [which] necessitates use of human relation skills, in appropriate degrees with appropriate timing" (Goldhammer, Anderson & Krajewski, 1980, p.53). Rapport nurturance is fundamental to learning. The coaching training appears to have created a conscious awareness of and tools for maintaining this critical element.

Participants uniformly indicated that they were conscious of some elements of the cognitive coaching model during their identified interaction. Additionally, they reported an awareness of the model in their own self-questioning, internal dialog, inference making and diagnosis of the situation. The maps and tools of the model were 'in their head' and promoted conscious and strategic metacognitive behavior. These maps and tools provided multi-layered filters for diagnosing the situation, aided in the generation of pivotal questions, helped to decrease their impulsivity at crucial decision points, enhanced their ability to generate alternatives from a wider variety of perspectives, increased their repertoire of strategies and allowed them to suspend their egocentricity in viewing the problem. In general, participants employed the maps as a filter for viewing the interaction. They expressed clear connections between their observations and their actions.

Tolerance for ambiguity and a high level of flexibility are two key skills for engaging in complex problem solving. The participants' descriptions were full of expressions of doubt, descriptions of experimentation and subsequent confirmations of action. They resonated with the recognition that human interaction demands comfort with uncertainty, and that their best

efforts based on clear intentions would have to suffice. By raising their awareness regarding nuance in both verbal and non-verbal behavior, their cognitive coaching training increased the complexity of their interactions. Participants' revealed that multiple tapes were playing inside their heads, simultaneously. However, the responses also included a strong sense of validation regarding participants' trust in the process and in their own capacity for and commitment to continued skill development.

The participants' language is full of discovery - - about themselves, their colleagues and the process of cognitive coaching. They expressed vulnerability and insecurity regarding their effectiveness and their skillfulness. They also expressed amazement and pleasure at their successful applications and developing expertise. Their descriptions were allocentric, indicating their growing ability to relate to their colleagues point of view. They came to appreciate differing perspectives, overcome temporary resistances and understand others' motivations. They were frequently surprised by individuals with whom they had worked for many years.

It was striking to note the similarities among the responses regarding the importance of collaboration. There were frequent expressions of the desirability of engaging an entire staff in more reflective, collaborative interactions. The recognition of the growth promoting power of these types of interactions was expressed repeatedly in the data.

Reflection must be purposeful, conducted with rigor and structured in some formal way (Killion & Todnem, 1991). While much of the writing regarding reflective practice suggests its potency for improved professional practice, questions still remain regarding the manner and methods most likely to promote reflection. The findings of this study suggest that reflective practice is greatly enhanced when based on a rich and specific framework. Structured reflection is a powerful process for mediating experience and building professional knowledge. A framework, in this case cognitive coaching, offers multiple lenses for focusing attention, organizing and processing information, linking prior knowledge, building conceptual understandings and facilitating transfer of newly discovered professional knowledge to new settings and situations. For the participants in this study, the cognitive coaching maps offered a structure for self-dialog based upon questions designed to deepen and extend the reflection, examine experience from multiple perspectives, analyze the experience, generate inferences, attach new significance to events, synthesize learnings and develop new hypothesis.

Limitations of the Study

There are a number of limitations to this work. By design, the participants were chosen because of their training as cognitive coaches. However, their decisions to commit such significant time, energy and fiscal resources to this process might indicate that they were already reflective, self-renewing individuals. Therefore any generalizability is offered with caution.

Further, cognitive coaching places a high value on reflection, both philosophically and structurally. The cultivation of conscious and strategic metacognitive habits of mind is integral to the model. Individuals engaged in a cognitive coaching relationship over time cannot help but engage in reflection. Although the findings suggest that a framework supports reflection, it may be that it is the specific framework of cognitive coaching that does so. Future studies of a similar nature with a variety of frameworks would be illuminating.

Reflections

This paper presents the experience of a group of educational leaders who have made a commitment to promoting cognitive development for themselves and others in their school community. This research was designed to examine ways in which participants used their own supervisory experience as a source of information for examining their current practice and informing their future practice. It offers an analysis of their own capacity to reconstruct and learn from their experiences using the framework of cognitive coaching. It also suggests some implications and raises some questions regarding school leadership and school renewal.

Structured Reflection and School Renewal

That teaching is a process of contextual, complex and constant decision making has been well-established in the literature (see for example, Berliner, 1982; Clark & Peterson,1986; Hunter, 1979; Jackson 1968). Supervision as a process for enhancing teachers' decision making processes and promoting cognitive growth has also been addressed (Garman, 1990; Costa & Garmston, in press; Glickman, 1980). The supervisory interaction is enhanced when it is based upon mutual trust and respect and focused on mutual learning. Reflective practice offers a potent process for enhancing the power of the supervisory interaction towards professional growth and school renewal. Rosenholtz (1991) suggests that teachers develop new conceptions of their work through communications with their principal or colleagues in which "new aspects of experience are pointed out with fresh interpretations" (p.3). Reflection keeps practitioners continually fresh through opportunities to consider their experience in previously unthought of dimensions.

Several compelling factors support learning more about the institutionalization of reflective practice as a norm for building a professional knowledge base, facilitating professional development, and developing cognitive autonomy These include:

1) The nature of teachers' work is non-routine (Rosenholtz, 1991). Non-routine work requires complex, contextual decision-making and an inquiry-oriented approach to practice. Reflection facilitates development of problem-solving skills by fostering an ability to reframe experience, generate alternatives, make inferences based on prior knowledge and evaluate actions

to construct new learnings. Through reflection, practitioners might develop new patterns of thinking and alternative perspectives from which they can take a fresh look at the challenges of their practice.

What might schools be like if everyone in them employed a common set of tools and maps to engage in frequent, systematic, individual and collaborative reflection regarding their professional practice?

2) Collaborative cultures support risktaking. Current school reform efforts require collaborative cultures where practitioners engage in rigorous reflection on their practice with a mutual willingness to question underlying assumptions (Little,1982; Hargreaves, 1990). Reflective practice increases comfort with professional uncertainty and supports the notion of conscious experimentation and continued professional growth. Cultural norms which support reflective practice and which enable educational leaders to use supervisory interactions to facilitate cognitive growth create a powerful combination to support educational change, collaborative endeavors and overall school improvement.

What might be some of the effects of systematic, structured reflection on workplace commitment, school culture and student outcomes?

3) School leaders communicate their values through their actions. To create schools which are communities of learners, school leaders need to become models of risk-taking, open-mindedness and continuous learning. Elements critical to this type of work environment include rich opportunities for interaction, shared reflection and the modeling of reflective practice by administrators and other school leaders (Grimmett, 1988).

In what ways would teachers' define their professional roles and goals if the supervisory interaction were one in which trust and learning were the basis for continued exploration regarding improved practices?

Implications for Administrative Preparation and Practice

A crucial function of school leaders who hope to bring about significant school reform is to improve and support group problem solving (Leithwood, 1991). To do so requires flexibility of thinking which brings a broader range of perspectives to problem interpretation. Flexible school administrators will be most effective in promoting collaborative problem solving opportunities if they actively seek varied interpretations, while being explicit in their own interpretations; and by placing specific problems within the larger context of the whole school and its overall direction. *How might schools be different if administrative preparation programs focused on the*

development of these functions by integrating reflective practice during pre-certification experiences?

It is hoped that the findings of this study will: add to the literature regarding the potency of reflection-on-action as a method for adding to the professional knowledge base; encourage dialogue regarding the importance of structured reflection for administrative practice and preparation; and provoke further inquiry into the potential of supervision as a process for increasing teachers' and administrators' capacities to adapt a problem-posing, inquiry oriented perspective on their practice by reconstructing, reframing and reflecting on their own professional experiences.

As one participant shared in her own thoughts about the opportunity to reflect on experience using the cognitive coaching framework, "it gives one a lot of ah-ha's!".

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Appendix I: Structured Protocol

1.Recall a *significant* experience that occurred this year in which you believe cognitive coaching influenced the outcome and/or the process.

2.Describe what occurred as *objectively* as possible, (i.e., report what the teacher said, rather than offering your interpretation of what was going on for the teacher). Include a description of the problem/issue, the setting, what initiated the incident, the "characters", and the outcomes.

3.Reconstruct the experience as a reflective conversation. Recall your thoughts, feelings, attitudes, and behaviors in the moment. Describe your internal processes. What were you noticing about yourself, about the other person(s), about the situation that informed your decisions/actions. Describe your internal dialog. What questions were you asking about your internal (what was going on for you) and external (what was going on for the other person(s) or the situation) state? What questions were you asking yourself?

4. Based on this experience, and your reflection regarding this experience, what insights, inferences, generalizations are you forming. How might you apply these to future practice? What questions are you asking yourself now?

5. In what ways, specifically, did cognitive coaching influence this process (the original experience, your analysis, your reflections)?

Table 1: FIVE AUTONOMOUS STATES OF MIND

Efficacy
People who are efficacious have an internal locus of control. They persevere. They produce knowledge. They engage in cause effect thinking. They pose problems and search for problems to solve. They are optimistic and resourceful. They are self-actualizing and self-modifying. They are able to operationalize concepts and translate them into deliberate actions. They establish feedback loops and continue to learn how to learn.

Flexibility
People who manifest the state of mind of flexibility are empathic. They can take another person's point of view. They can see from multiple perspectives. They are comfortable with ambiguity. They use lateral thinking, are innovative and creative. They generate a range of alternatives and can envision potential consequences. They have the capacity to change their mind as they receive additional data. They can operate on multiple levels simultaneously. They can practice style flexibility, knowing when it is appropriate to be broad and global in their thinking and when a situation calls for precision.

Clarity
People operating from a state of clarity seek perfection and pride themselves in artisanship. They seek refinement and specificity in communications. They generate and hold clear visions and goals. They strive for exactness of critical thought processes. They use precise language for describing their work, seeking always to construct meaning from their experiences and to communicate meaning to others. They test and revise, calibrating their actions with both internal and external criteria, constantly honing strategies to reach goals.

Consciousness
People who enjoy a state of consciousness monitor their own values, thoughts, behaviors and progress of themselves and others toward goals (metacogitate). They have well-defined value systems that they can articulate. They generate, hold and apply internal criteria for decisions they make. They practice mental rehearsal and the editing of mental pictures in the process of seeking improved strategies.

Interdependence
Autonomous people have a sense of interdependence. They are altruistic. They seek collegiality. They give themselves to group goals and needs. They contribute to a common good and they draw on the resources of others. They value consensus. They are able to hold their own values and actions in abeyance in order to lend their energies to the achievement of group goals. They seek engagement in holonomous part-whole relationships. They have a desire to be a productive member of the group. They trust their abilities to manage group differences in productive ways.

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Table 2: COGNITIVE COACHING MAPS AND TOOLS

Inquiry Maps

The Planning Conference

Coaches mediate by having the teacher:

- Clarify goals and objectives
- Anticipate teaching strategies and decisions
- Determine evidence of student achievement
- Identify the coach's data gathering focus and procedures

The Reflecting Conference

Coaches mediate by having the teacher

- Summarize impressions and assessment of the lesson
- Recall data supporting impressions and assessment
- Compare planned with performed teaching decisions, and student learning
- Infer relationships between student achievement and teacher decisions/behaviors
- Synthesize new learnings and self-prescribe applications
- Reflect on the coaching process and recommend refinements

Filters of Perception

Rear Filters:

- Representational Systems
  - Visual,Auditory,Kinesthetic
- Cognitive Style
  - Field Dependent,Field Independent
- Educational Belief Systems
  - Academic Rationalist
  - Cognitive Processor
  - Technolcgist
  - Self-Actualizer
  - Social Reconstructionist

Forward Filters (Autonomous States of Mind)

- Efficacy
- Flexibility
- Precision
- Consciousness
- Interdependence

Meta-Model

- Comparators
- Universal Quantifiers
- Unspecified Nouns
- Modal Operators
- Unspecified Verbs

Pace and Lead

Elements of a Pace

1. Empathy 2. Content
3. Goal 4. Pathway

Elements of a Lead: To mediate towards a more autonomous state of mind, coaches:

- Orient from existing state toward desired state
- Get Agreement on overarching value/outcome
- Chunk-up or repace

Tools that Promote Thinking

Elements of Rapport

- Posture
- Gesture
- Tonality
- Language
- Breathing

Questioning to Cause Complex Thought

- **Intonation**
- **Syntax**
- **Positive Presuppositions**

Non-Judgemental Response Behaviors

- Reflective questioning
- Silence (Wait Time)
- Paraphrasing
  - Simple
  - Translating
  - Summarizing
  - Synthesizing
- Accepting
  - Verbal acknowledgement
    - Active
    - Passive
  - Non-verbal acceptance
- Clarifying
  - detail
  - values
  - meaning
- Probing for specificity
  - use of meta-model
- Providing data, resources