COGNITIVE COACHING℠: A SYNTHESIS OF THE RESEARCH

by Jenny Edwards, PhD

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"Perhaps the most significant thing we have confirmed for ourselves is that, although actions are important, the thinking that influences and shapes what we do is far more critical. Changing our thinking is the first thing we have to do both individually and collectively, because without that change we cannot possibly change what we really do on a day-to-day basis. Regardless of what new 'method' or latest technique is attempted, the mind/brain will always choose to reduce such practices to fit entrenched assumptions and beliefs. To really restructure anything means to restructure our thinking and shift deep connections in our psyche."

(Caine & Caine, 1997, p. vi)

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Ten Outcomes of Implementing Cognitive Coaching℠

What are some of the reasons to implement Cognitive Coaching℠?
What are some of the benefits it will bring to my school district?
How will coaching help teachers in the district improve their practice?
What are some of the ways that students in our school system will benefit?

These are all important questions, the answers to which are revealed in research. Researchers have found the following:

Outcome #1 – Cognitive Coaching℠ was linked with increased student test scores and other benefits for students.

- In a study by González Del Castillo (2015), three regular education elementary teachers who were teaching children who were linguistically diverse received Cognitive Coaching from the researcher. She gathered data from semi-structured interviews, classroom observations, and the Cognitive Coaching sessions. The participants used Cognitive Coaching skills with their students and observed that their students grew in their ability to think more deeply. They associated the positive outcomes for their students with their use of Cognitive Coaching. Furthermore, the "teachers showed evidence of more responsive teaching, especially with linguistically diverse students" (p. 117). They felt more confident in their work with linguistically diverse students.

  The teachers believed that the Cognitive Coaching they received was focused on their needs, in contrast to traditional professional development, which did not meet their needs (González Del Castillo, 2015). They felt increasing ownership of what they were doing in the classroom. They felt active as they received Cognitive Coaching rather than feeling passive, as they did when they attended regular professional development sessions.

- In a study by Alicea (2014), 9 K-12 ESL teachers and 44 ESL paraprofessionals attended 12 seminars on the Sheltered Instruction Observation Protocol (SIOP) over two years, and they received Cognitive Coaching as they were implementing what they had learned. They filled out a three-part survey at the end of their training. Alicea "found that post-implementation as a measure of cognitive coaching was a statistically significant predictor of the ESL teachers' and ESL paraprofessionals' knowledge of SIOP" (p. 97). In addition, "as ESL teachers' and ESL paraprofessionals' knowledge of SIOP increased, their use of SIOP in their classrooms also increased" (pp. 97-98).

- Irons (2014) explored the impact of training in asking mediative questions (Costa & Garmston, 2002) and coaching with a trained Cognitive Coach for 10 weeks on the questions that one middle school teacher and five mentors asked their students. Sessions were recorded and transcribed for a total of 173 minutes. Participants filled out questionnaires at the beginning of the study and at the end. Irons found that the participants valued receiving coaching on how they were applying what they learned in the seminar; moved from asking closed-ended questions to asking open-ended questions; developed the language pattern of using the word, *space*; talked about how they had learned and grown as a result of the seminar; and indicated that their students were learning in the same areas that they were learning. In addition, they had implemented the elements of mediative questions into their practice.

- Jaede, Brosnan, Leigh, and Stroot (2014) examined the influence of Cognitive Coaching[SM] on 28 middle school and high school mentor teachers in an urban setting. Their "thinking and talking about teaching and learning moved from the generic question of '*How do students learn?*' to the fine-grained and nuanced questions, '*How will I ensure these students, in this classroom, in this school, in this community learn?*' and '*How does who I am in the context of my classroom impact learning?*'" (p. 27).

- Diaz (2013) conducted a study in which teachers (Grades 2-5) who were not associated with the National Board Certification process had the opportunity to experience the elements of the process. She compared three groups—Group One: those who received elements of the National Board Certification process, including Cognitive Coaching[SM]; Group Two: those who participated in the National Board Certification process; and Group Three: a control group. Each group included four teachers. Those in Group One received 8-10 coaching sessions in four months. She found increases in student achievement on the district benchmark reading assessment in Group One. Student achievement in teachers' classes in Group One improved more than in Group Two and Group Three.

- Rinaldi (2013) asked third-, fourth-, and fifth-grade teachers who had received Cognitive Coaching training to teach their students about the Five States of Mind and have them develop a Question Bank for each of the States of Mind. They asked themselves and each other the questions to help them solve problems in mathematics. She found that when the students used the Question Banks for 10 weeks, they grew significantly from pretest to posttest on their overall scores on the Mathematics Constructed Response Rubric (Los Angeles Unified School District, n.d.). Third grade students grew significantly on both of the subscales, fourth grade students grew significantly on four of the five subscales, and fifth grade students grew significantly on three of the four subscales.

- Rinaldi (2013) also found that when third, fourth, and fifth grade students developed and used Question Banks based on the Five States of Mind for 10 weeks, they grew significantly on all five of the subscales of the Five States of Mind Scale (Consciousness, Craftsmanship, Interdependence, Flexibility, and Efficacy) (Ushijima, 1996a) in a repeated measures analysis of variance.

- In addition, Rinaldi (2013) found that when third, fourth, and fifth grade students developed and used Question Banks based on the Five States of Mind for 10 weeks, the third grade students grew significantly from pretest to posttest on the Implicit Theories of Intelligence for Children—Self-Form (Dweck, 1976) in a paired-samples *t* test.

- Four elementary education teacher candidates participated in a 15-week inquiry-based practicum in which they participated in an initial interview, received three Cognitive Coaching cycles, participated in five online seminars, received information about their teaching via the Classroom Assessment Scoring System (CLASS) instrument (Pianta, La Paro, & Hamre, 2008), engaged in peer discussions, and filled out Professional Disposition Reflections (Linn, 2012). "The data indicated that participation in inquiry-based field experiences positively influenced the teacher candidates' effective interactions with children in all three CLASS domains: Emotional Support, Classroom Organization, and Instructional Support" (p. 196). Linn concluded "that participation in inquiry-based field experiences positively supports teacher candidates' ability to recognize, describe, and emulate effective classroom interactions with children" (p. 202).

- Robinson (2011) found that five teachers who received monthly Cognitive Coaching[SM] sessions from August to November and participated in a Community of Practice to support them in taking the National Board certification improved significantly in "perceived knowledge of their students" (p. 31). They "were more aware of setting high, meaningful instructional goals based on their knowledge of students and their needs" (p. 31). "They became even more consistently aware of who their students were and even more attentive to how they might meet their students' individual needs" (p. 41). As a result, "they felt better prepared to meet those student needs" (p. 42). In their Cognitive Coaching[SM] conversations, they "discussed students and their learning needs approximately 90% of the time" (p. 43). In addition, participants spent approximately 75% of their time in their Communities of Practice "discussing [their] students and their learning" (p. 44).

- Robinson (2011) also found that "after the intervention, the participants were more likely to agree that their assessment provided evidence of student learning" (p. 32). The intervention "provided structured opportunities for the participants to analyze and discuss their students' instructional needs, how they approached these needs through instructional strategies and the impact on student learning" (p. 32). "They were more aware of their students' prior knowledge and understood students' learning needs at a deeper level" (p. 45). During their Cognitive Coaching[SM] conversations, they "discussed their grade level curriculum and their instructional approaches approximately 80% of the time" (p. 47). The teachers also "began to align their teaching practice to the NBPTS standards" (p. 49).

- Fifteen teachers who had taken instruction in Sheltered Instruction Observation Protocol (SIOP) received Cognitive Coaching as they were implementing what they had learned with English Language Learners (Batt, 2010). Before receiving coaching, 53% of the teachers had implemented the model "to a great extent," while after coaching, 100% had implemented it "to a great extent" (p. 1003). "Virtually all teachers reported positive effects on student learning as a result of SIOP implementation after coaching. . . . The self-reports corroborated with data

obtained from observation ratings on the valid and highly reliable SIOP instrument (Echevarría et al., 2008)" (p. 1003). "This study suggests that coaching has a direct and significant effect on teachers' instruction. The cognitive coaching phase heightened implementation substantially, even after teachers had already had an extended period of long-term ongoing training and peer collaboration in each school" (p. 1004). The teachers in the study believed that they developed higher expectations for their culturally diverse students as a result of participating in Cognitive Coaching. In addition, "all teachers reported gains in students' achievement as a result of heightened SIOP implementation following the coaching phrase, which both rewarded teachers for employing the framework and further motivated them" (p. 1005).

- When 14 8th grade students were taught to use Cognitive Coaching℠ to coach each other in writing using the Planning Conversation and employing pausing, paraphrasing, and probing, all except one student grew two stanines on the International Educational Research Bureau (ERB) Writing Assessment Program (WrAP) (Powell & Kusuma-Powell, 2007).

- In Powell and Kusuma-Powell's (2007) study in which 14 students coached each other in their writing, the researchers perceived that the students increased in self-confidence in their writing and thinking abilities. In addition, the students in the study reported that they were applying the nonverbal and verbal skills that they learned in their personal lives.

- Third grade students' test scores improved over a three-year period as a result of teachers receiving the Read to Achieve Grant and receiving Cognitive Coaching℠ from an instructional coach as they were implementing the grant (Reed, 2007). "Teachers attributed the success of the third grade students to the collaboration of the second and third grade team and the instructional coach" (p. 232).

- In Eger's (2006) study, veteran teachers at the high school level reported that "Cognitive coaching had a significant impact on transforming their teaching" (p. 61). They said, "they learned new strategies that created a calmer classroom, more discussions and openness between teachers and students, and a greater sense of ownership in teachers and students solving their own problems" (p. 61).

- In addition, teachers in Eger's (2006) study said that their participation in Cognitive Coaching℠ as a method of supervision changed their teaching styles, which "had an impact on the classroom environment" (p. 62). They perceived their classrooms as being "a lot friendlier" (p. 62) and believed that "they . . . were less reactive to situations and student behaviors" (p. 62). They felt that they were more open with students "during class discussions" (p. 62). In their students, they saw "more thinking about answers and better connection of ideas and concepts" (p. 62). They observed that, "students are opening up and sharing things in

discussions that did not occur before" (p. 62). In addition, teachers felt "a greater sense of calm working with colleagues and students" (p. 64). Participants perceived that Cognitive Coaching℠ "influenced student behaviors, their thinking, and the climate of the classroom thus impacting student achievement" (p. 64).

- Eger (2006) found that when second- and third-year teachers received Cognitive Coaching℠ from their mentors, they "perceived that improving their instruction, providing a variety of lessons, and better classroom management resulted in greater student participation, more involved learning, . . . ultimately having a greater impact on student achievement" (p. 92).

- Students of five first-grade teachers who received Cognitive Coaching℠ in a nine-week study grew in guided reading level, dictation, and word identification more than students in a control group, although not significantly (Slinger, 2004). Small sample size, length of the study (only nine weeks), the control group consisting of students from higher socio-economic status homes, the fact that the control group teachers had more experience and the students began at a higher level, and the fact that not all student progress may have been measured by the instruments that were used may have influenced the outcome. In addition, one treatment group teacher had significantly lower mean gains for students in the low group than the other teachers. This could possibly be because of having higher numbers or English as a Second Language (ESL) and special education students and other factors.

- When nine experienced third and fourth grade teachers from low performing schools who were in a Masters level program coached each other for four months focusing on using rubrics for teaching strategies and wrote reflections, their students grew significantly over a comparison group on the *Degrees of Reading Power* (DRP) reading comprehension test (Fine & Kossack, 2002).

- Kindergarten students' test scores on the Gates-MacGinitie Reading Test, Level BR (Beginning Reading) (MacGinitie, MacGinitie, Maria, & Dryer, 2000) were compared for teachers who received Cognitive Coaching℠ for a year after participating in a two-week lecture course in implementing a balanced literacy program, teachers who only attended the two-week course, and teachers who received no training (Rennick, 2002). Student test scores for the Cognitive Coaching℠ group were significantly higher, and students of teachers in the group receiving no training scored significantly higher than students of teachers in the group who received the two-week lecture course.

- The lower-achieving kindergarten students' test scores on *An Observation Survey* (Clay, 1993) were compared for teachers who received Cognitive Coaching℠ for a year after participating in a two-week lecture course in implementing a balanced literacy program, teachers who only attended the two-week course, and teachers

who received no training (Rennick, 2002). Student test scores for the Cognitive Coaching[SM] group were significantly higher on the subtests of word identification, and hearing and recording sounds in words. No significant differences were found for the subtests of letter identification and text reading.

- When the four subtests of *An Observation Survey* (Clay, 1993) were correlated for lower-achieving students, the correlations for the teachers who received Cognitive Coaching[SM] for a year after participating in a two-week lecture course in implementing a balanced literacy program were greater than the correlations for teachers who only attended the two-week course, and teachers who received no training (Rennick, 2002).

- Teachers trained in Cognitive Coaching[SM] found themselves consciously creating an atmosphere of trust and nonjudgmentalness in their classrooms, seeking to help their students arrive at decisions on their own (McLymont, 2000; McLymont & da Costa, 1998).

- Teachers who were supervising student teachers indicated that using Cognitive Coaching[SM] with their student teachers impacted their own teaching (Clinard, Mirón, Ariav, Botzer, Conroy, Laycock, & Yule, 1997). In addition, they found themselves using non-judgmental feedback with their students and reflecting more on their lessons.

- Teachers who participated in a three-year project utilizing Cognitive Coaching[SM] increased significantly in reported level of use of Standards-Based Education than did teachers in a matched control group (Hull, Edwards, Rogers, & Swords, 1997).

- Teachers who participated in a three-year project utilizing Cognitive Coaching[SM] decreased significantly in referring students to special education when compared with teachers in a matched control group (Hull, Edwards, Rogers, & Swords, 1997).

- Teachers trained in Cognitive Coaching[SM] grew significantly on the Encouragement of Higher Order Thinking Skills subscale of the *Teacher Survey* (McCombs, 1995) over a matched control group (Hull, Edwards, Rogers, & Swords, 1997).

- In a three-year project utilizing Cognitive Coaching[SM], monthly dialogue groups, and Nonverbal Classroom Management to assist teachers in implementing Standards-Based Education, differences in changes for the treatment and control schools were found on the Iowa Test of Basic Skills (ITBS) for Total ITBS Score and Integrated Writing Total Score between Year 1 and Year 3, for Math Advanced Skills and Integrated Writing Advanced Skills between Year 1 and 2 and between Year 1 and 3, and for Math Total Score between Year 1 and 2 (Hull,

Edwards, Rogers, & Swords, 1997). While scores for control schools improved over time, improvements found for treatment schools exceeded changes for control schools.

- Teacher interns who received mentoring for a year by experienced teachers who had been trained in Cognitive Coaching[SM] had more journal entries about student learning, what new students needed, and student welfare (Burk, Ford, Guffy, & Mann, 1996). Their topics were more student-centered, while student teachers in a traditional student teaching program had more teacher-centered entries that were focused on their own performance. Those who received Cognitive Coaching[SM] also wrote about more successes than concerns, and they wrote about more answers than about questions. In addition, they wrote that they felt confident that they could solve problems, and they wrote evaluations of how they solved the various problems that they encountered. They were able to draw their own conclusions rather than looking outside of themselves for answers.

- Cognitive Coaching[SM] was used as part of a program to restructure a Title I program by having teachers teach collaboratively rather than pulling the students out of class (Hagopian, Williams, Carrillo, & Hoover, 1996). Teachers received training in how to manage instruction, Cognitive Coaching[SM], pedagogy, and assessment. After two years, teachers showed significant improvements in their perceptions that the model impacted teaching and student learning.

- Students of teachers who were trained in Cognitive Coaching[SM] were assessed in their question asking skills for quantity and quality (Ushijima, 1996b). In one semester, 78% of the students increased the quantity of questions asked, 74% of the students increased in the quality of the questions they asked, and they decreased 65% in the number of irrelevant responses that they gave. In one year, 85% of the students increased the quantity of questions asked, 91% of students increased in the quality of the questions they asked, and they decreased 46% in irrelevant responses. Students of teachers who participated in more coaching cycles gained more than did students of teachers who participated in fewer coaching cycles.

- Students of teachers who were trained in Cognitive Coaching[SM] were assessed in their math problem solving skills (Ushijima, 1996b). In one year, 86% of the students showed gains in their math problem solving skills. Students of teachers who participated in more coaching gained more than did students of teachers who participated in less coaching.

- Teachers trained in Cognitive Coaching[SM] who used it over the course of a year reported that they made changes in their teaching (Awakuni, 1995). Both interview data and observations confirmed that they increased in their use of inquiry methods, including asking more higher-level questions, varying their explanations

and feedback to students, and involving students more in discussions. They also made changes in their classroom management, using more strategies to work with misbehavior, organizing the classroom to prevent behavior problems from occurring, motivating students with grades, and rethinking how curriculum was aligned. In addition, they used new strategies for teaching and assessing students, such as using cooperative learning and helping students clarify their thinking in writing projects. They also attempted to accommodate different learning styles by using art, video, music, projects, and demonstrations.

- Teachers expanded their teaching practices over the course of a year, adopting such practices as team teaching, learning logs, peer tutoring, marketing strategies, student choices, multiple forms of assessment, exhibitions, interviews, and learning styles (Awakuni, 1995).

- Teachers using Cognitive Coaching[SM] expanded their repertoires of strategies to increase student learning such as re-teaching concepts more frequently, giving choices to students, asking questions that were essential, and taking the role of facilitator when working with students (Awakuni, 1995). They also used multiple strategies for assessing students such as journals, rubrics, case studies, and portfolios.

- Teachers who used Cognitive Coaching[SM] for a year wrote numerous entries in their journals about students who had changed tremendously as a result of their teaching and coaching (Awakuni, 1995).

- High school sophomores viewed 10-15 minute videotapes of their teacher being cognitively coached twice a week for six weeks, and the control group of students viewed videotapes of the teacher reporting the results of the coaching conversations for the same period of time (Muchlinski, 1995). Those who viewed the tapes of the Cognitive Coaching[SM] conversations increased in the use of verification behaviors in problem solving. The differences approached significance.

- In their comments on the portfolios of teachers who were using Cognitive Coaching[SM] to help them reach their goals, principals emphasized their teachers' increasing use of higher level questions with students and their growth in communicating with and working with students (Edwards & Newton, 1994c).

- Teachers who received Cognitive Coaching[SM] expanded their teaching repertoires, requested greater student accountability, exhibited more power as they planned lessons, and became more conscious of their behaviors and options as they worked with students (Garmston, Linder, & Whitaker, 1993). They also began to use the coaching behaviors of paraphrasing, probing, and gathering data with their students as they internalized the coaching process.

- As a result of being cognitively coached for a year, senior high teachers taught more thinking skills to their students and modeled the skills of coaching (Sommers & Costa, 1993).

- University professors trained in Cognitive Coaching[SM] showed substantial improvement in using language more precisely in their teaching, as well as in expanding their teaching repertoires (Garmston & Hyerle, 1988). They improved moderately in engaging in increased instructional dialogue with other faculty members and having higher levels of student learning.

Outcome #2 – Teachers grew in efficacy.

- Wooten Burnett (2015) used the Ohio State Teacher Efficacy Scale (OSTES) (Tschannen-Moran & Hoy, 2001) and the Physical Education Teaching Efficacy Scale (PETES) (Humphries, Hebert, Daigle, & Martin, 2012) to measure the efficacy of seven physical education teacher candidates in a Masters program as a result of receiving three cycles of Cognitive Coaching[SM] (three Planning Conversations and three Reflecting Conversations) over a period of six weeks. Seven teachers participated in the control group. She also collected data from semi-structured interviews, an open-ended survey, and the three cycles of Planning and Reflecting conversations. She found that "Cognitive Coaching[SM] had a statistically significant impact on physical education teacher candidates' teacher efficacy measured by the PETES and OSTES" (p. 121). In addition, she found from the qualitative data that, "the planning conversation helped them become more aware of student needs" (p. 96). The participants in the treatment group indicated that "the planning conversation helped them (a) think critically—category 1, (b) set realistic expectations—category 2, and (c) be more flexible—category 3" (p. 97). "The planning conversation helped them become more aware of their self-development" (p. 97). Finally, the participants indicated that they had "become more aware of their lesson planning development" as a result of participating in the planning conversations (p. 98). Participants also indicated that the reflecting conversations had helped them to increase in self-development and "become more aware of their lesson reflection development" (p. 102). Data from the open-ended surveys indicated that the teachers in the treatment group had grown in their ability to plan lessons and in their self-development. They planned lessons to help students be successful. They also grew in their ability to reflect on their lessons. They indicated that Cognitive Coaching helped them grow both professionally and personally, and that it "impacted their overall student teaching experience" (p. 109). Overall, they developed by becoming more focused on students, they developed personally, and they increased their abilities to plan lessons.

- Skytt, Hauserman, Johnson, and Rogers (2014) used the Principal Sense of Self-Efficacy Scale (Tschannen-Moran & Gareis, 2004) to measure the efficacy of 15 experienced

principals who coached 23 beginning principals. At the beginning of the study, the coaches' efficacy was significantly higher than the principals' efficacy on two of the three subscales (Instructional Leadership and Management). Their scores did not differ on the Moral Leadership scale. After two years, no differences were found between the efficacy of the coaches and the efficacy of the principals.

- Robinson (2011) found that five teachers who received monthly Cognitive Coaching[SM] sessions from August to November and participated in a Community of Practice to support them in taking the National Board certification improved significantly in self-efficacy as indicated by the teacher efficacy items from the *Energy Sources Team Self-Assessment Survey* created by Ellison and Hayes (2002), as well as by qualitative data. According to Robinson, "the participants believed that they had the capabilities to successfully complete the board process" (p. 30) and were able to "explore resources within themselves" (p. 63).

- Student teachers who received mentoring during a semester from Clinical Faculty who were trained in Cognitive Coaching[SM] grew more in teaching efficacy than did teachers who received mentoring from Clinical Teachers who were not trained in Cognitive Coaching[SM]. Formative assessment and the language of support were most important in helping them grow in efficacy. Mutual trust, positive relationships, and formal feedback were also important in their growth (Maginnis, 2009).

- Baker (2008) assessed the content knowledge related to Cognitive Coaching[SM] of 11 mentors and correlated it with the level of self-efficacy of 15 Initially Licensed Teachers whom they were mentoring. She found that mentors who had a high level of content knowledge had mentees with high levels of self-efficacy as measured by Bandura's Teacher Self Efficacy Scale (2006), and mentors who had low levels of content knowledge of Cognitive Coaching[SM] had mentees with lower self-efficacy.

- Teachers who participated in a three-year project utilizing Cognitive Coaching[SM] grew more in teaching efficacy on the *Teacher Efficacy Scale* (Gibson & Dembo, 1984) than did teachers in a matched control group (Edwards, Green, Lyons, Rogers, & Swords, 1998).

- Teachers with higher levels of teaching efficacy indicated that they used paraphrasing more frequently, asked questions more often, coached students and parents more, and generally used coaching skills more often than did teachers with lower levels of teaching efficacy (Edwards, Green, Lyons, Rogers, & Swords, 1998).

- Teachers who were coached by experienced Cognitive Coaches[SM] scored significantly higher on the State of Mind of Efficacy than did a matched control group (Alseike, 1997).

- Teachers who were trained in Cognitive Coaching[SM] grew significantly in teaching

efficacy between 1993 and 1996 (Edwards & Green, 1997). Growth in teaching efficacy was correlated with length of time in the district, more positive attitudes toward Cognitive Coaching SM, implementation of a larger number of teaching practices in the past two years, and more positive attitudes toward Professional Growth Planning.

- Second-year, third-year, and fourth-year teachers who participated in a seven-month program of Cognitive Coaching[SM] grew significantly on the *Teacher Efficacy Scale* developed by Guskey and Passaro (1993) over a matched control group (Krpan, 1997; Smith, 1997). They also grew significantly over the control group during the same period of time on written expressions of efficacy.

- Teachers who participated in Cognitive Coaching[SM] showed higher levels of teaching efficacy than did teachers in a matched control group (Edwards & Newton, 1995).

- Teachers who used Cognitive Coaching[SM] more frequently scored significantly higher in teaching efficacy than did teachers who used it less (Edwards & Newton, 1994b).

Outcome #3 – Cognitive Coaching[SM] impacted teacher thinking, causing teachers and administrators to be more reflective and to think in more complex ways.

- In a study by González Del Castillo (2015), three regular education elementary teachers who were teaching children who were linguistically diverse received Cognitive Coaching from the researcher. She gathered data from semi-structured interviews, classroom observations, and the Cognitive Coaching sessions. "Participants . . . pointed out the increase in their use of reflective practice" (p. 114). They also felt "empowered to use skills and practices they were familiar with, analyze them, modify them, and apply them in a new way as a result of their participation in the cognitive coaching cycles" (p. 115). They felt the support of others as they were using the new strategies for working with their students, and they valued having the opportunity to engage in dialogue with their coach.

  In addition, the participants indicated

  > that having the opportunity to discuss their planned activities prior to the actual lesson delivery was helpful, because it allowed them to create a mental picture of their lesson, see what needed to be adjusted, and what additional planning was necessary. (p. 116)

- Chang, Lee, and Wang (2014) compared 117 elementary and secondary teachers who had participated in three days of Cognitive Coaching training and used the skills in their schools for a year with 117 teachers in the comparison group. They found that

the teachers who used Cognitive Coaching improved significantly more than the comparison group in their ability to reflect on their practice, both in the strategies that they used and the content of their reflections.

- Jaede, Brosnan, Leigh, and Stroot (2014) examined the influence of Cognitive Coaching℠ on 28 middle school and high school mentor teachers in an urban setting. They found that the mentor teachers increased their ability to reflect on their practice, and they were able to assist their interns in reflecting on their practice. Their use of Cognitive Coaching℠ enabled them to become better mentors by focusing on the thinking and learning of their interns. They were able to assist their interns in becoming more autonomous, "help the interns develop their own perspective about teaching, and create their own identity as a teacher in an urban context" (p. 22).

- Bjerken (2013) studied teachers at the elementary, middle, and high school levels in a school district to determine their thoughts about how receiving Cognitive Coaching℠ for four years had impacted their teaching. They had participated in three coaching cycles per year for four years with a certified Cognitive Coach. They filled out surveys and participated in focus groups. They indicated that they had increased in reflection and had decreased in their sense of isolation. Rather than focusing on the faults in their past lessons, they were able to focus on the positive aspects of lessons they had taught. They were able to apply their new learnings in future lessons and professional endeavors. In addition, participants focused more on the details of the lessons when they were being observed and coached than when they were not being coached. Teachers also focused more on planning for specific groups of students, as well as individuals. They became aware of how students were engaged while they were teaching, how they were interacting with their students, and how students were learning. They expressed the desire for more specific feedback and ideas for improving their lessons. They wanted the coach to have taught their grade level and subject. Some participants indicated that they were more able to identify when students were achieving and were better able to measure student achievement. They believed that student learning had increased for the unit they were teaching and could not say whether student achievement in general had increased.

- Diaz (2013) conducted a study in which teachers (Grades 2-5) who were not associated with the National Board Certification process had the opportunity to experience the elements of the process. She compared three groups—Group One: those who received elements of the National Board Certification process, including Cognitive Coaching℠; Group Two: those who participated in the National Board Certification process; and Group Three: a control group. Each group included four teachers. Those in Group One received 8-10 coaching sessions in four months. As a result of reflecting, collaborating with one another, and working with a coach, the teachers in Group One grew in their ability to understand content knowledge and the needs of their students. They indicated that they were reflecting more, and that they were more focused on meeting their students' needs. They refined what they did as a

result of reflecting on their practice. They talked about what they believed as teachers, and they explored the positive dispositions that they held as professionals. They talked about the ways in which they collaborated with parents and colleagues. They enjoyed having time to collaborate with their coach, as well as to watch videotapes of themselves and discuss what they were seeing with a coach. Teachers in Group One saw value in being coached.

- Avant (2012) found that four effective instructional coaches demonstrated the Five States of Mind of flexibility, efficacy, consciousness, craftsmanship, and interdependence when talking about their practice, as well as elements of Emotional Intelligence (managing emotions, understanding emotions, perceiving emotions, and facilitating thought).

- Henry (2012) compared the weekly reflective journals (13-15 weeks) of teacher candidates who had been exposed to Cognitive Coaching[SM] with the journals of teacher candidates who had not been exposed to Cognitive Coaching[SM]. She selected 18 journals from each group (every fifth journal), beginning with the journal entries from Week 4. She found that the teacher candidates who had experienced Cognitive Coaching[SM] "were able to learn more from their experiences and used more words indicating higher levels of the five states of mind in their reflective journals" (Abstract).

- Lin (2012) studied the growth of 28 mathematics teachers in their instructional conversations over a year as a result of receiving Cognitive Coaching[SM]. She used multilevel modeling to analyze the data. Two coders analyzed the teachers' lesson plans for eight sessions. Additional data included the teachers' reflection journals, feedback from the coaches, and the observation notes from the coaches. Lin also conducted interviews with the coaches to clarify questions she had while analyzing the data. Lin found that the coached teachers grew consistently as a result of receiving Cognitive Coaching[SM], noting that they had low scores on instructional planning prior to receiving Cognitive Coaching[SM]. Teachers grew the most after the first coaching conversation, the next most after the second conversation, and the next most after the third conversation. Teachers who taught at the elementary level grew more quickly than secondary teachers in their instructional conversations.

- Four elementary education teacher candidates participated in a 15-week inquiry-based practicum in which they participated in an initial interview, received three Cognitive Coaching cycles, participated in five online seminars, received information about their teaching via the Classroom Assessment Scoring System (CLASS) instrument (Pianta et al., 2008), engaged in peer discussions, filled out Professional Disposition Reflections (Linn, 2012).

  The recurring themes revealed several positive influences on the teacher candidates' professional development including

- enhanced awareness and personal value of people and experiences that helped prepare them for their practicum experiences;
- improved abilities to demonstrate meaningful understanding and application of content knowledge; . . .
- effective utilization of reflective learning as a strategy to enhance awareness of themselves as professionals, practice professional discernment, internalize professional standards, and refine their thinking in ways that contribute to enhanced intentionality as effective teachers. (p. 197)

- Loeschen (2012) conducted a phenomenological study of four mentor teachers who had received four days of Cognitive Coaching[SM] training to assist their mentees. (Typically, the training lasts for eight days.) The teachers reported that Cognitive Coaching[SM] had influenced their own practice by supporting the way they reflected, helping them to experience cognitive shifts in the way they thought, and influencing the way they taught their own students. They increasingly asked themselves questions as they were teaching and afterwards. They realized the need to reflect, and they connected their new thinking with what they already knew. They increasingly believed that asking themselves questions was important, and they used their questions to help them refine what they were doing with their students in their own classrooms.

- Bal and Demir (2011) developed the Cognitive Coaching Questionnaire (CCQ) to measure the growth of 180 pre-service teachers in metacognitive skills as a result of receiving Cognitive Coaching. The teachers were studying in the Science and Technology Education Department at Çukurova University in Turkey. The instrument, which contains 34 items related to planning (5 items), thinking (23 items), and evaluating (6 items), had a reliability of .94. They found that "teachers use some steps [in] the cognitive coaching approaches (23.52%), and they do not use most of the steps (73.52%)" (p. 339). They suggested that "the teachers do not really know about the new approach called cognitive coaching, and therefore they do not [know] how metacognition is used in the teaching process" (pp. 339-340).

- Robinson (2011) found that five teachers who received monthly Cognitive Coaching[SM] sessions from August to November and participated in a Community of Practice to support them in taking the National Board certification "became more self-reflective in their teaching practice throughout the semester of study" (p. 34). The teachers indicated that, "they more often analyzed why they teach, what they teach, and what the benefits on student learning might have been" (p. 36). In addition, the teachers indicated "that they believed [the Cognitive Coaching[SM] conversations] helped them through the National Board process" (p. 37). Teachers spent approximately 75% of the time in their Communities of Practice reflecting on their practice.

- Eger (2006) found that for veteran teachers who had received training in Cognitive Coaching[SM] who were mentoring second- or third-year teachers using Cognitive

Coaching[SM] and had chosen to be supervised with the Cognitive Coaching[SM] model, "Cognitive coaching has at least 'some' to a 'great' extent of impact on the four phases of teacher thinking, with the greatest impact occurring at the evaluation and analysis phase" (p. 50).

- When Eger (2006) gathered data to determine the effects of Cognitive Coaching[SM] on the four phases of teacher thinking, she found "a significant difference between those [veteran] teachers that had three or more courses in cognitive coaching to those only having one course in cognitive coaching. Teachers with three or more courses in cognitive coaching had a greater ability when it came to clear and precise language, lesson planning, and evaluation of lessons. These same teachers reported that cognitive coaching helped them to monitor their progress when it came to implementing their lessons more so than teachers who had only taken one course in cognitive coaching" (p. 54).

- In Eger's (2006) study, veteran teachers "discussed how cognitive coaching's reflective practice resulted in higher levels of thinking and more critical analysis of goals, lesson, plans, and teaching behaviors, as well as evaluation of their own teaching and student performance" (p. 67).

- Eger (2006) found that the more commonalities the mentor and second- or third-year teacher had (grade level, department, subject taught, etc.), "the greater impact mentoring appeared to have when it came to the four phrases of their teacher thinking and behaviors" (p. 99).

- Evans (2005) coached two middle school teachers on their implementation of research-based recommended practices for teaching middle school students. During the course of five coaching cycles (Planning Conversation, Observation, and Reflecting Conversation), the teachers moved from describing their lessons and reflecting on their lessons in general terms to being more specific about their lessons and reflecting in more depth.

- In their reflection logs, first grade teachers who were coached during a nine-week period of time reflected continually about their teaching processes (Slinger, 2004). This reflection resulted in the teachers changing their lesson plans. The teachers also felt affirmed from reflecting and became more conscious about how they delivered instruction in the classroom. In addition, the teachers reflected between the times when they were coached.

- First grade teachers who received Cognitive Coaching[SM] examined and reflected on data in order to improve their classroom practices, and they refined their instruction based on the data (Slinger, 2004). "Conversation topics shifted from relating that students 'had needs' to specifically identifying those needs and discussing what could be done about it" (p. 164).

- When master teachers used Cognitive Coaching with their student teachers, the student teachers reflected on their practice, as evidenced by data from both the master teachers and the student teachers (Brooks, 2000a, 2000b). The student teachers reported that the coaching that they received from the master teachers helped them to reflect and grow.

- Teachers who received three cycles of Cognitive Coaching[SM] over a period of seven months were compared with a group of teachers who received traditional evaluation, which included observations by administrators and letters containing suggestions after the observations (Moche, 1999, 2000/2001). They were also compared with a group of teachers who participated in informal discussions about their classroom instruction. Although all of the teachers grew on a measure of reflective thinking, the *Reflective Pedagogical Thinking Instrument (RPT)* (Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990), teachers who received Cognitive Coaching[SM] grew significantly more than the control groups.

- Teachers implementing Cognitive Coaching[SM] over three years increased the length of their coaching conversations over time (Edwards & Green, 1999a). In initial conversations, teachers talked in generalities about their lessons, and they talked about their performance as they interacted with the class as a whole. In later coaching conversations, teachers who were being coached focused more on the effects that their lessons had on student learning, as well as the effects of their lessons on individual students in the class.

- Teachers who had been trained in Cognitive Coaching[SM] scored above the mid-point on the subscales of analyzing and evaluating, and applying on the *Teacher Thought Processes* questionnaire (Foster, 1989), indicating that Cognitive Coaching[SM] had impacted those two areas of their thinking about instruction, which suggested that they grew in higher order thinking skills (Uzat, 1999). In addition, teachers scored above the midpoint on thinking more while they were teaching, "using clear and precise language during teaching" (Uzat, 1999, p. 61), evaluating their actions while they were planning their lessons and teaching them, thinking about the behaviors they used while they taught, and thinking about possible alternatives while they were teaching.

- Teachers using Cognitive Coaching[SM] reflected more deeply on their practice at the end of the project than at the beginning (McLymont, 2000; McLymont & da Costa, 1998).

- Teachers who participated in Cognitive Coaching[SM] training and coached each other reported that Cognitive Coaching[SM] assisted them in thinking more precisely about their teaching (Schlosser, 1998). They hypothesized that they had become more reflective as a result of Cognitive Coaching[SM].

- Teachers who had received Cognitive Coaching℠ from experienced coaches scored significantly higher than did teachers who had not received Cognitive Coaching℠ on measures of planning, teaching, analyzing, and applying (Alseike, 1997).

- Teachers who had received Cognitive Coaching℠ from experienced coaches scored significantly higher than teachers who had not received Cognitive Coaching℠ on measures of Efficacy, Flexibility, Consciousness, Interdependence, and overall Holonomy (Alseike, 1997).

- Second-year, third-year, and fourth-year teachers grew significantly in seven months over a matched control group in expressions of how they had grown professionally (Krpan, 1997). Those who participated in Cognitive Coaching℠ indicated that they grew in awareness of their teaching practices as a result of coaching. They indicated that they had numerous opportunities to grow and change professionally.

- During eight months, special education interns in a masters program who met monthly to learn and practice Cognitive Coaching℠ skills grew significantly in awareness, skill development, and application of those skills (McMahon, 1997). At the end, they also had grown in their ability to think reflectively, to self-analyze and self-evaluate, and to apply the coaching skills in their teaching.

- Teachers in a seven-month study using Cognitive Coaching℠ grew significantly over a matched control group in their perceptions of their abilities to bring about purposeful change (Smith, 1997).

- Second-year, third-year, and fourth-year teachers who participated in Cognitive Coaching℠ over a seven-month period of time increased in their abilities to think reflectively on qualitative measures of reflection (Smith, 1997). They grew in awareness about their teaching practices, became more observant, and gained greater insights into their teaching. This self-reflection helped them to redefine their perceptions about their teaching roles. They also grew in appreciation for the value of self-reflection.

- Teacher interns who received mentoring for a year from experienced teachers who had been trained in Cognitive Coaching℠ wrote that they felt confident that they could solve problems, and they wrote evaluations of how they solved the various problems that they encountered (Burk, Ford, Guffy, & Mann, 1996). They were able to draw their own conclusions rather than looking outside of themselves for answers.

- Teachers who used Cognitive Coaching℠ for 1½ years showed a 40% increase in the State of Mind of Efficacy, a 33% increase in Flexibility, a 27% increase in Consciousness, and a 37% increase in Craftsmanship (Ushijima, 1996b). Quantitative measures were supported by the qualitative measures. When teachers

used the coaching process at least four times, they showed gains in the Five States of Mind.

- Teachers who used Cognitive Coaching[SM] with student teachers became more reflective as they re-examined their teaching methods and classroom management strategies, revisited strategies they had been using for many years, and brainstormed teaching ideas with their colleagues (Clinard, Ariav, Beeson, Minor, & Dwyer, 1995).

- In their comments on the portfolios of teachers who were using Cognitive Coaching[SM] to help them reach their goals, principals emphasized their teachers' growth in self-reflection and their increased desire to learn and grow professionally (Edwards & Newton, 1994c).

- First-year teachers who received Cognitive Coaching[SM] grew significantly on the conceptual level question, "When I am told what to do . . ." (Edwards, 1993). This indicated that they were thinking in more complex ways.

- Higher numbers of formal and informal interactions with coaches were correlated with increased growth on the *Reflective Pedagogical Thinking Instrument (RPT)* (Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990) (Edwards, 1993).

- First-year teachers who received Cognitive Coaching[SM] and filled out more Interaction Sheets, which were their reflections on their coaching conferences, grew more on the *Reflective Pedagogical Thinking Instrument (RPT)* (Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990) than did those who filled out fewer Interaction Sheets (Edwards, 1993).

- Teachers who received Cognitive Coaching[SM] became more flexible in their thinking and teaching styles as they became more balanced, using the side of their brains that they formerly hadn't used as much (Garmston, Linder, & Whitaker, 1993). They became more balanced in using analytic and intuitive styles.

- Administrators who had been trained in Cognitive Coaching[SM] were asked to reflect on an event in which they used their Cognitive Coaching[SM] skills in order to obtain an outcome (Lipton, 1993). As they reflected, they made conscious choices, used paraphrasing, pacing and leading, and elements of rapport, kept the Five States of Mind in their awareness, identified goals for their own growth, related their positive results to specific coaching maps and tools, and reflected on their growth in coaching. In addition, they identified next steps for their own growth, recognized their own growth as well as the growth of the person they were coaching, reflected on the importance of coaching for their staff, and expressed appreciation for being asked to reflect in writing on the event.

- As a result of being coached for a year, senior high teachers reported that the coaching facilitated their achieving their goals because they changed the strategies they used in teaching their students (Sommers & Costa, 1993).

- Teachers who participated in seven or more coaching conferences perceived that Cognitive Coaching[SM] had a high level of impact on their thought processes in the areas of planning, teaching, analyzing, evaluating, and applying (Foster, 1989). It didn't matter whether they were coached by an administrator or by a colleague.

- In a peer coaching program for professors in which they received 42 hours of training in Cognitive Coaching[SM], the professors showed maximum improvement in their ability to analyze and evaluate themselves (Garmston & Hyerle, 1988). They also grew in self-perception and the ability to autonomously perform cognitive activities. In addition, they developed increased confidence in themselves and greater enthusiasm for teaching.

Outcome #4 – Teachers were more satisfied with their positions and with their choice of teaching as a profession.

- Teachers who participated in a three-year project utilizing Cognitive Coaching[SM] grew more in satisfaction with their positions than did teachers in a matched control group (Edwards, Green, Lyons, Rogers, & Swords, 1998).

- Teachers who participated in a three-year project utilizing Cognitive Coaching[SM] grew more in satisfaction with teaching as a profession than did teachers in a matched control group (Edwards, Green, Lyons, Rogers, & Swords, 1998).

- Teachers involved in a Cognitive Coaching[SM] program lasting a year indicated that they were satisfied with their positions because of the support they gave to one another (Awakuni, 1995).

- Teachers who used Cognitive Coaching[SM] in working with student teachers as University Associates reported "renewed enjoyment and enthusiasm about teaching in the classroom" (Clinard, Ariav, Beeson, Minor, & Dwyer, 1995, p. 21). In addition, they became more motivated to remain in the field of education.

- Teachers who engaged in Cognitive Coaching[SM] were significantly more satisfied with teaching as a profession than were teachers in a matched control group (Edwards & Newton, 1994a, 1995).

- Teachers trained in Cognitive Coaching[SM] expressed more positive feelings about all aspects of their experiences as teachers than did teachers who did not take Cognitive Coaching[SM] training (Edwards & Newton, 1994a, 1995). Those trained in Cognitive

Coaching[SM] listed 16 sources of dissatisfaction with their positions, and those who hadn't taken the training listed 57 sources of dissatisfaction.

- Teachers trained in Cognitive Coaching[SM] were more likely to mention autonomy and flexibility, as well as the opportunity to contribute to students, as sources of satisfaction with their teaching position (Edwards & Newton, 1994a).

- Teachers who had taken Cognitive Coaching[SM] training mentioned the following sources of satisfaction with teaching as a profession more often than those who had not taken the training: 1) learning and growth; 2) the ever-changing nature of the profession; 3) the opportunity to make a difference; 4) the opportunity to be creative; and 5) staff (Edwards & Newton, 1994a).

- Teachers who had been trained in Cognitive Coaching[SM] listed the following as being positive influences on their attitudes toward Cognitive Coaching[SM]: 1) usability of skills; 2) respectful of teachers and nonjudgmental; 3) positive influence on school culture; 4) coaching triads with whom they coached; 5) it makes sense; 6) personal growth; 7) opportunity to reflect (Edwards & Newton, 1994a).

- Teachers who took Cognitive Coaching[SM] training expressed significantly higher satisfaction with teaching as a career than did teachers who had not taken Cognitive Coaching[SM] training (Edwards & Newton, 1994b).

- First-year teachers who received Cognitive Coaching[SM] from trained coaches expressed more satisfaction with the supervision they received than did first-year teachers who received traditional supervision (Edwards, 1993).

Outcome #5 – School cultures became more professional.

- Skytt, Hauserman, Johnson, and Rogers (2014) used the School Climate Index for principals (DiPaola & Tschannen-Moran, 2005) to measure the perceptions of school climate of 15 experienced principals who coached 23 beginning principals for two years. Both coaches and principals increased on all four subscales. The coaches increased more on the Academic Press subscale than the principals. School climate increased in both coaches' and principals' schools. Teacher Professionalism increased more in the principals' schools, followed by Collegial Leadership, Community Engagement, and Academic Press.

- Knaebel (2008) observed a literacy coach in a Reading First School in Indiana 3-4 times per week for 4 months in a qualitative single case study. She also conducted informal interviews with her. The coach was trained in Cognitive Coaching[SM] and used it with her teachers. Knaebel found that the coach possessed the following characteristics: credentials, knowledge of the research base, knowledge of what she was responsible to do, an in-depth understanding of the context in which she worked,

and the ability to access the resources in her teachers. The competencies that she possessed included the ability to build trust and rapport, collaborate with her teachers, serve as a model, coach her teachers, conduct regular classroom visits, provide professional development to her teachers, and be organized.

- "While the implementation of Cognitive Coaching℠ influenced change in educational practice, it did not occur unless a teacher was open and willing to change. Teachers also had to recognize there was need to change" (Reed, 2007, p. 231). Teachers experienced "a renewed sense of professionalism" (p. 231) as a result of being coached by an instructional coach, which brought about "a more professional attitude," as well as "teachers' willingness to change their educational practice" (p. 231).

- Teachers trained in Cognitive Coaching℠ grew significantly on the Teacher Professionalism and Goal Setting subscale of the *School Culture Survey* (Saphier, 1989) over a matched control group (Edwards, Green, Lyons, Rogers, & Swords, 1998). Teachers who had higher scores on Teacher Professionalism and Goal Setting built rapport with others more frequently and participated in more coaching cycles.

- Teachers trained in Cognitive Coaching℠ grew significantly on the Administrator Professional Treatment of Teachers subscale of the *School Culture Survey* (Saphier, 1989) over a matched control group (Edwards, Green, Lyons, Rogers, & Swords, 1998).

- Teachers who felt that their administrators treated them more professionally had participated in more Cognitive Coaching℠ cycles (Edwards, Green, Lyons, Rogers, & Swords, 1998).

- Supervising teachers indicated that by supervising student teachers using Cognitive Coaching℠, they increased their sense of professionalism and were able to network with other educators (Clinard, Mirón, Ariav, Botzer, Conroy, Laycock, & Yule, 1997).

- Teachers who had taken Cognitive Coaching℠ training, when compared with a control group, spent more hours in workshops both during school time and outside of school time, had implemented more new teaching practices in the last two years, had more positive attitudes toward Cognitive Coaching℠, and had more positive attitudes toward Professional Growth Planning (Edwards & Green, 1997).

- In a 1½ year study of teachers using Cognitive Coaching℠, team teaching improved, teachers had more of a sense of community, they trusted each other more, they had greater resiliency, they shared ideas more, they felt more comfortable with taking risks, they solved problems together, they were more accepting of differences because of mutual respect, they communicated more across grade levels, and they

gave and received more support and feedback in their work with children (Ushijima, 1996b).

- Teachers involved in a year-long Cognitive Coaching[SM] program took on more leadership positions during their involvement such as giving presentations to the faculty, increasing their involvement in state activities, and joining the school leadership team (Awakuni, 1995).

Outcome #6 – Teachers collaborated more.

- In Eger's (2006) study, which was done at the secondary level, "there was a strong conviction that cognitive coaching was responsible for developing deeper and stronger relationships with their peers, as well as with their students" (p. 57). Teachers said that Cognitive Coaching[SM] created more "collaboration, more conversations, and improved relationships more so now than in the past" (p. 58). They reported that they were able to listen more effectively, "become more patient with their colleagues and students" (p. 60), and improve their relationships with others. In addition, Cognitive Coaching[SM] "increased teachers' appreciation and awareness of what other teachers did" (p. 60). They enjoyed having coaching partners who were in different departments.

- Teachers who had taken training in Cognitive Coaching[SM] reported that the training reduced their sense of isolation and helped them grow in trust (Dougherty, 2000). They also felt more of a sense of collegiality with other teachers in their school.

- Teachers who were trained in Cognitive Coaching[SM] grew significantly on the Collaboration subscale of the *School Culture Survey* (Saphier, 1989) over a matched control group (Edwards, Green, Lyons, Rogers, & Swords, 1998). Teachers who had higher scores in Collaboration on the *School Culture Survey* (Saphier, 1989) built rapport more frequently, participated in more coaching cycles, and believed that they had changed more as a result of Cognitive Coaching[SM].

- Teachers using Cognitive Coaching[SM] to improve their teaching of mathematics developed a collaborative coaching community as they worked together to discover new insights about their teaching (McLymont, 2000; McLymont & da Costa, 1998).

- Teachers who were coached by experienced Cognitive Coaches scored significantly higher on the State of Mind of Interdependence than did a matched control group who had never experienced Cognitive Coaching[SM] (Alseike, 1997).

- In a study by Edwards and Green (1997), teachers who participated in Cognitive Coaching[SM] scored significantly higher than a control group on the Relatedness subscale of the *Vincenz Empowerment Scale* (Vincenz, 1990). While this was the

only subscale of the instrument on which significance was obtained, treatment group scores were higher than control group scores on all subscales of the instrument and on Total Empowerment.

- Teachers who grew more in Total Empowerment on the *Vincenz Empowerment Scale* (Vincenz, 1990) indicated that they informally coached their colleagues more frequently, built rapport with colleagues more frequently, paraphrased colleagues more often, asked questions of their colleagues more often, and used Pace and Lead more frequently (Edwards & Green, 1997).

- Higher levels of empowerment were associated with more frequent coaching conversations (Edwards & Newton, 1995).

- Teachers reported that, as a result of Cognitive Coaching[SM] training and implementation, they had more of a sense of community in the school, they talked more about teaching, and the atmosphere in the school was more positive (Edwards & Newton, 1994b). Teachers also indicated that they had more rapport among themselves, they seemed more open to growth and new ideas, and they tended to evaluate themselves more frequently.

- As a result of being coached for a year, senior high teachers talked more with their colleagues about their teaching and ceased being concerned about the extra time involved in coaching (Sommers & Costa, 1993).

Outcome #7 – Cognitive Coaching[SM] benefited teachers and principals professionally.

- Chang, Lee, and Wang (2014) compared 117 elementary and secondary teachers who had participated in three days of Cognitive Coaching training and used the skills in their schools for a year with 117 teachers in the comparison group. They found that the teachers who used Cognitive Coaching improved significantly more than the comparison group in their teaching effectiveness in the areas of communicating, grasping teaching strategies, and applying teaching strategies dynamically.

- Donahue-Barrett (2014) investigated the effects of Cognitive Coaching with six elementary teachers in a writing workshop. She found that with 4-6 cycles of coaching, the teachers increased in their knowledge of writing instruction, as well as in their instructional practices. She also found that the planning conferences, demonstration lessons, and coteaching lessons were most effective in helping to increase the teachers' knowledge and instructional practices. The teachers said that they would have preferred to have had more time with their coach.

- Jaede, Brosnan, Leigh, and Stroot (2014) examined the influence of Cognitive Coaching on 28 middle school and high school mentor teachers in an urban setting. They found that the mentors changed their view of the role they played. They came to see themselves "as teacher educators, mediators of intern learning" (p. 23). They were focused on helping their interns grow each day, and they created "a collaborative partnership with the shared goal of identifying evidence of student learning" (p. 23). They also came to see themselves as teacher leaders with "collegial collaboration with colleagues, students and parents" (p. 25).

- Skytt, Hauserman, Rogers, and Johnson (2014) examined the self-reported competencies of 15 experienced principals who coached 23 beginning principals for two years. Both the coaches and the beginning principals were more competent and had acquired the behaviors fostering the competencies on the seven indicators on the Alberta Professional Practice Competencies for School Leaders (Government of Alberta, 2012) by the end of the project.

- Hauserman, Edwards, and Mastel (2013) conducted four focus groups with 19 teachers at a school in which the teachers were asked to compare their impressions of walk-throughs with Cognitive Coaching℠. The teachers had experienced walk-throughs by their administrators for a year, followed by Cognitive Coaching℠ from their administrators for a year. The first theme of the study was "Reflection as a Catalyst for Change" (p. 14). The teachers indicated that the walk-throughs did not assist them in growing professionally, while Cognitive Coaching℠ allowed them to reflect on their practice and gain insights. The second theme was "Support and Trust" (p. 16). The teachers felt that their administrators supported them in the Cognitive Coaching process, and they trusted their administrators. The third theme was "Openness and Collaboration" (p. 17). The teachers felt less isolated with Cognitive Coaching℠, and they were more willing to share their ideas with administrators and with other teachers. The teachers felt encouraged to grow professionally, and they increased in their abilities to reflect. In short, the teachers preferred Cognitive Coaching℠ over walk-throughs.

- Rich (2013) compared the experiences of "two novice alternatively certified reading teachers positioned at two chronically underperforming and high poverty schools" (Abstract). One teacher received Cognitive Coaching℠ from her, and the other teacher did not. She gathered data through interviews, observations, and four coaching cycles that included Planning and Reflecting Conversations. She found that "Cognitive Coaching substantially influenced her ability to self-monitor and self-modify her teaching behaviors" (p. 124). The teacher became more efficacious, as demonstrated by her "increased capacity to make informed instructional decisions resulting in improved learning outcomes for her students" (p. 124). She showed an internal locus of control when she made errors. In addition, she also became more flexible, as evidenced by her changing her instruction when she found out her students would learn more. She became more craftsmanlike, as evidenced by her continual quest to improve her teaching craft. She improved in asking questions and differentiating

instruction. As a result, her students grew in their ability "to think critically and to engage in complex thought" (p. 124). She also grew in consciousness as evidenced by changing the decisions she made, as well as her behaviors. Rich concluded that, "all four states of mind played an important influence on Participant 01B's ability to make changes to her practice. However, if Participant 01B had not taken the time to reflect and to become conscious of her own teaching decisions and behaviors, she would not have been able to make the modifications that she made in the study" (p. 168). Thus, for Rich, consciousness appeared to be the State of Mind that drove the other States of Mind.

- Four elementary education teacher candidates participated in a 15-week inquiry-based practicum in which they participated in an initial interview, received three Cognitive Coaching cycles, participated in five online seminars, received information about their teaching via the Classroom Assessment Scoring System (CLASS) instrument (Touchstone, n.d.), engaged in peer discussions, filled out Professional Disposition Reflections (Linn, 2012). The teachers demonstrated "new professional insight and abilities gained through experiential learning; broadened professional, personal, and interpersonal awareness prompted by the coinquiry interactions with their peers, cooperating teachers, and faculty" (p. 197).

- McCloy (2011) worked with a student teacher and a mentor teacher, providing five preobservation protocols based on the National Board for Professional Teaching Standards propositions and postobservation protocols based on Cognitive Coaching[SM]. Rather than the focus being on the student teacher, the focus was on the mentor teacher. The student teacher asked the questions of the mentor teacher. McCloy found that the mentor teacher benefited professionally from the experience. Specifically, the mentor teacher reported that the quality of the relationship with her student teacher facilitated her learning, she learned from her student teacher, she learned to examine her own lesson plans more critically, she noticed the difference between the naïveté of her student teacher and her own experience and felt affirmed, and she felt a sense of accountability for providing accurate information to her student teacher.

- Robinson (2011) found that five teachers who received monthly Cognitive Coaching[SM] sessions from August to November and participated in a Community of Practice to support them in taking the National Board certification improved significantly in the way they "viewed themselves as a community of practice" (p. 31). Robinson suggested "that the intervention may have had a positive impact as it provided structured time devoted to supporting the participants' needs as they navigated through the board certification process" (p. 32).

- Batt (2010) conducted a study in which 15 teacher leaders were trained in the Sheltered Instruction Observation Protocol (SIOP) for working with English Language Learners. After participating in the training, 80% of the teachers indicated that they were committed to implementing the model. In reality, only 53% of them implemented

the model. Then, they received Cognitive Coaching℠ around implementing the model. After that, 100% of the teachers were fully implementing it. This was also evident in the qualitative data. In addition, nearly all of the teachers said that students were benefiting from the SIOP model after they had received Cognitive Coaching℠.

- In a study by Robinson (2010) of a mentoring program, both novice teachers and mentor teachers mentioned Cognitive Coaching℠ as being an important part of the program.

- Beltman (2009) found that teachers who participated in Cognitive Coaching℠ training enjoyed the training, used the skills, grew in their understanding of coaching over the eight days of training, and refined their skills. In addition, they no longer felt like they needed to solve problems for others, and they continued practicing their skills. After eight days of training, teachers had a mean over 3.0 on a scale of 1 to 5, indicating that they felt that their training had made a difference, they consciously used the skills they had learned, and they were looking forward to more experiences in Cognitive Coaching℠.

- "When teachers engaged in coaching conversations with the instructional coach and other teachers, they had opportunities to create new mental models and attempt new strategies and techniques they might not have otherwise attempted without support" (Reed, 2007, p. 230). "While teachers struggled to identify the process of Cognitive Coaching℠, they acknowledged changes in their instructional practice over time as they engaged in individual conversations with the instructional coach and met in cross-grade level groups with the instructional coach" (p. 212).

- In Eger's (2006) study, second- and third-year teachers who were coached by mentor teachers who had been trained in Cognitive Coaching℠ reported that Cognitive Coaching℠ had the most impact on supporting their emotional needs and helping them think about their behaviors in teaching students.

- As he used Cognitive Coaching℠ skills to coach two middle school teachers in using research-based methods for teaching at the middle school level, Evans (2005) moved from believing that he needed to tell teachers what to do to realizing the importance of listening to them. He also grew in his coaching skills the more he coached them. He believed Cognitive Coaching℠ to be a way of improving instruction at the middle school level. According to Evans, "I can report to a teacher what I have seen during a three-minute visit; however, I have learned from this study that reporting on what I have observed will not lead to improved instruction. The teachers want to engage in professional conversations that will help their performance" (p. 122).

- Teachers who were coached in five coaching cycles in implementing research-based strategies for working with middle school students had definite ideas about what they wanted to focus on in their coaching sessions (Evans, 2005). Initially, the coach, who

was their assistant principal, had thought that he would coach them on areas that they hadn't been implementing. Evans suggested that if he had coached them in more coaching cycles, they may have moved into focusing on additional strategies.

- Coy (2004) investigated the year-long Transition to Teaching Program, of which Cognitive Coaching℠ was a key component. She found that during the course of the year, mentors moved from a "sense of failure and frustration as Mentors" to a "sense of personal growth and empowerment" (p. 142). In addition, they moved from not "understand[ing] their roles as mentors" to having "rejuvenated energy levels" (p. 142). They went from having "limited success attributed to 'Random Acts of Collaboration' between mentor and protégé" to "recogniz[ing] sound mentoring practices" and "recogniz[ing the] need for protégés to reflect on their practices" (p. 142). Coy also found that the mentors were able to establish trust and rapport, and they moved from telling the protégé what to do to asking questions and paraphrasing in order "to assist the protégé to be more reflective and self-directed" (p. 146). She discovered that at the end of the project, "the focus of the mentors . . . was the development of the protégé, not the 'cloning' of the mentor" (p. 140).

- In Coy's (2004) study, protégés who were being Cognitively Coached moved from being concerned about surviving to being focused on "the success of students" (p. 159). "The data provided instances from the various focus groups, case-profiles, and field notes of examples of self-directed behavioral changes both in terms of the mentor and protégés" (p. 146). In "the final mentor focus group," mentors pointed out a "number of instances" of "the proteges' self-management, self-monitoring, and self-modification" (p. 140). "Self-directed learning was evident for mentors and protégés in that they recognized their strengths and weaknesses and either sought solutions to their dilemmas or modified their behaviors as they taught and learned" (p. 148).

- As a result of being coached, first grade teachers reported that they were able to think on deeper levels and with greater clarity, become more accountable for their actions, solve problems, feel the support of others, feel as though they were challenged, and target their teaching (Slinger, 2004).

- First grade teachers reported that being coached impacted their reading instruction "in the following positive ways: (a) instruction became more focused, (b) more thoughtful planning occurred, (c) teachers increased their craftsmanship in particular areas of instruction, and (d) the status quo was questioned" (Slinger, 2004, p. 153).

- During exit interviews after receiving Cognitive Coaching℠ for nine weeks, first grade teachers said positive things about Cognitive Coaching℠ (Slinger, 2004). They reported that the experience had impacted their thought processes. They spent more time reflecting about their practice, and they thought in different ways about their craftsmanship as teachers. In addition, they said that they felt supported and stronger as a result of having a coach, and they valued having the opportunity to be coached.

- As a result of being coached, first grade teachers grew during a nine-week period in their assessment of themselves in the Five States of Mind (Slinger, 2004).

- When 64 experienced third and fourth grade teachers from low performing schools who were in a Masters level program coached each other for four months focusing on using rubrics for teaching strategies and wrote reflections, they became more comfortable with peer assessment, became more tolerant of the lack of structure that comes with working in groups at the college level, and became more open to receiving feedback and ideas about their teaching (Fine & Kossack, 2002). In addition, they developed more appreciation for Cognitive Coaching[SM], used it in their classrooms, and shared it with others.

- Based on data from both master teachers and student teachers, the college that provided training in Cognitive Coaching[SM] for master teachers who were supervising student teachers had a positive return on its investment. Brooks (2000a, 2000b) used Kirkpatrick's (1998) model to evaluate the effects of the training. The master teachers enjoyed the training and what they had learned. They understood what they had learned from the training. They applied what they had learned with the student teachers with whom they worked. As evidenced by reports from the student teachers, the master teachers used what they learned with them. In addition, student teachers noticed a difference between master teachers who had been trained in Cognitive Coaching and master teachers who had not received the training.

- Dougherty (2000) found that teachers who participated in Cognitive Coaching[SM] training liked the training, learned how to use Cognitive Coaching[SM], changed their behavior, and obtained results from using their new communication skills, all elements of Kirkpatrick's (1998) model for evaluating the effects of training.

- Community college department chairs tended to use elements of Cognitive Coaching[SM] and laissez-faire supervision when they supervised both full-time and part-time faculty because they tended to relate in more of a collegial manner with those whom they supervised, although they were not aware of the formal strategies (Tarnasky, 2000).

- Mackie (1998) compared teachers who used the Cognitive Coaching[SM] format with teachers who received traditional supervision. Those who used Cognitive Coaching[SM] rated the overall quality of the observation process significantly higher. They also indicated that the collegial coaching process had more impact on their teaching practices, as well as on their attitudes toward teaching.

- In a study in which supervising teacher mentors used Cognitive Coaching[SM] with student teachers, the researchers concluded that Cognitive Coaching[SM] training was an excellent way to prepare mentor teachers (Clinard, Mirón, Ariav, Botzer, Conroy,

Laycock, & Yule, 1997). They also concluded that "Cognitive Coaching[SM] seems to have an impressive impact on mentors in their interaction with student teachers, in their own classes, and beyond their work as teachers in the school" (p. 27).

- Beginning teachers in the Student/Teacher Expanded Program (STEP), an alternative teacher training program, participated in 1-year internships and received mentoring from teachers who had been trained in Cognitive Coaching[SM] (Burk, Ford, Guffy, & Mann, 1996). They were compared with teachers in a traditional 12-week student teaching program. Those who participated in the STEP program increased significantly over the control group on ratings by self, supervising teacher, and university supervisor on all subscales of the *Proficiencies for Teachers* survey (Burk, Ford, Guffy, & Mann, 1996), including: 1) Learner-Centered Knowledge, 2) Learner-Centered Instruction, 3) Equity in Excellence, 4) Learner-Centered Communications, and 5) Learner-Centered Professional Development. The areas of Learner-Centered Knowledge and Equity in Excellence were the most robust.

- Teachers who used Cognitive Coaching[SM] with student teachers reported that they also used Cognitive Coaching[SM] with students in their own classrooms (Clinard, Ariav, Beeson, Minor, & Dwyer, 1995). In addition, they developed more rapport with students in their classrooms and focused more on creating child-centered environments for their students.

- Teachers who used Cognitive Coaching[SM] with student teachers became more aware of areas in which they needed to grow professionally (Clinard, Ariav, Beeson, Minor, & Dwyer, 1995). They also improved in their ability to communicate with others, felt more confident in facilitating the thinking of others, and became more respectful of other people.

- Student teachers who had received ten hours of training in Cognitive Coaching[SM] along with their supervising teachers reported that Cognitive Coaching[SM] provided them with a greater understanding of why teaching occurs the way it does, facilitated trust with their cooperating teacher, caused them to think deeply as they planned lessons, provided a common language for them to share with their cooperating teachers, and helped them anticipate the lesson in the Planning Conversation and bring closure to the lesson in the Reflecting Conversation (Townsend, 1995). In addition, Cognitive Coaching[SM] provided a structure that gave them time to think about their teaching, required the supervising teacher to use the recommended coaching practices of nonjudgmental responses, helped them own the lesson and feel a sense of power, helped them when they received support, and worked best when the supervising teacher had confidence in Cognitive Coaching[SM].

- Cooperating teachers who had received ten hours of training in Cognitive Coaching[SM] along with their student teachers reported that Cognitive Coaching[SM] helped them become more conscious about their teaching, validated their beliefs about teaching,

worked well for both progressive and traditional teachers, encouraged them to have collegial relationships with other coaches, enhanced the reflection of teachers who were already reflective, and helped them realize the value of listening by using paraphrasing and probing (Townsend, 1995). In addition, the success of the program depended on the ability of the cooperating teachers to use the Cognitive Coaching[SM] strategies effectively.

- Teachers in a graduate program of educational administration and leadership focusing on collaboration were coached each semester on their formative portfolios (Geltner, 1994). They also wrote reflectively on each document or artifact. They reported that Cognitive Coaching[SM] was one of the most powerful aspects of the program. In addition, they said that later in their careers, when they were in difficult situations, they found themselves thinking about their coaching experiences and realizing that they had the resources they needed within themselves to be successful.

- Graduate students in educational administration and leadership who used formative portfolio assessment, reflective practice, and Cognitive Coaching[SM] indicated that they deepened in their understanding, had opportunities to create meaning, and were able to engage in metacognitive analysis (Geltner, 1993). They also said that their linkages between theory and practice were enhanced, they became more open to exploring complex problems because they were in a safe environment, and they redefined and reaffirmed themselves as developing leaders.

Outcome #8 – Cognitive Coaching[SM] benefited teachers personally.

- Teachers who had taken eight days of Cognitive Coaching[SM] training indicated that they had developed personally as a result of the training (Beltman, 2009).

- Edwards (2004) found that teachers who are interested in Cognitive Coaching[SM] are interested in "Becoming" in their lives. She identified five steps in the process: "Beginning the Journey, Learning for Becoming, Gathering Colleagues on the Path, Re-Identifying, and Continuing the Journey" (p. 71).

- Teachers reported that the verbal and non-verbal messages in the coaching conversations created a comfortable atmosphere in which they felt secure and free to express themselves and learn from each other (McLymont, 2000; McLymont & da Costa, 1998). They also reported that they increased in creativity and flexibility.

- Teachers first used Cognitive Coaching[SM] in their personal lives before using it in their professional lives because trust had already been established in those relationships (Schlosser, 1998).

- After participating in Cognitive Coaching[SM] for a year, teachers reported having

increased confidence in themselves, as well as a greater sense of self (Awakuni, 1995).

- Teachers who used Cognitive Coaching℠ with student teachers grew in their positive feelings about themselves, and they altered their attitudes with people in their families (Clinard, Ariav, Beeson, Minor, & Dwyer, 1995).

- Teachers trained in Cognitive Coaching℠ listed usability of skills in all areas of their lives as the #1 source of satisfaction (Edwards & Newton, 1994a). They listed self-growth as the #2 source of satisfaction.

Outcome #9 – Cognitive Coaching℠ benefited administrators.

- Ellison (2003) investigated the impact of weekly coaching sessions with a trained Cognitive Coach on 12 principals and 4 assistant principals over four months. They received 6 to 8 hours of coaching in 10 to 13 sessions lasting between 20 and 60 minutes. They also responded to two reflective questions via e-mail after each coaching session. Data included the coach's observations and a 40-question survey designed to measure the Five States of Mind filled out by the administrator, three staff members, and his/her supervisor. The data from the principals, assistant principals, and their supervisors indicated that the participants had grown in the Five States of Mind. Participants grew the most in the States of Mind of Consciousness, Craftsmanship, and Flexibility. Each of the assistant principals told the Cognitive Coach "that this was one of the most valuable professional development experiences in which they had ever engaged" (p. 23). Five of the participants requested coaching after the study had ended.

- Principals identified collaboration with supervisors on work goals, frequent interaction with and observation by supervisors, responsive practices, and trusting relationships as contributing to their growth (McDonough, 1991, 1992). These are all involved in Cognitive Coaching℠.

Outcome #10 – Cognitive Coaching℠ benefited people in fields other than teaching.

- González (2009) worked with priests, nuns, and lay people who were participating in a three-year course in Spiritual Accompaniment, as well as those earning their Masters and Doctoral degrees in Spiritual Theology or in Christian Anthropology at a university in Rome, Italy. He developed the survey, "Relaciones con Dios y con el Prójimo," (Relationships with God and with Others) to measure the Five States of Mind related to the spiritual life. In the factor analysis of the instrument, Flexibility was contained in Efficacy. In addition, the State of Mind of Interdependence contained two

separate subscales—Collaboration and Altruism. In other words, one type of Interdependence involved working *with* others (collaboration), and the other type involved working *for* others (altruism).

González (2009) used four groups in his study. Participants in Group 1, who received the full eight-day training in Cognitive Coaching℠ and were coached twice a month from October through May, grew the most in the Five States of Mind from pretest to posttest (71.8 points overall, with significant growth from pretest to posttest in Consciousness, Craftsmanship, Efficacy, Collaboration, and Altruism). Group 2, who only received coaching twice a month, grew the next most (56.8 points, with significant growth in Consciousness, Collaboration, and Altruism). Group 3, who only took the eight-day training, grew the next most (40.2 points, with significant growth in Consciousness and Efficacy). Group 4, who did not receive anything, either regressed or stayed the same (-7.3 points, with no significant growth).

- Human resource developers from product and service organizations identified the States of Mind of Consciousness and Interdependence, followed by Flexibility, as critical attributes for all employees to have. These are three of the Five States of Mind that Cognitive Coaching℠ seeks to impact in teachers (Liebmann, 1993).

Twelve Recommendations for Implementing Cognitive Coaching℠

What are some of the factors that leaders in a district should consider as they are implementing Cognitive Coaching℠?
How can district leaders ensure maximum return on their investment?
What conditions need to be present in a system in order to maximize the impact of Cognitive Coaching℠?
Who should be trained, and what kinds of support might teachers need during the implementation process?

These questions are important for leaders to consider as they are designing a plan for bringing Cognitive Coaching℠ into a school district's culture. Researchers have identified the following twelve recommendations as being critical for implementing Cognitive Coaching℠ in a system.

Recommendation #1 – Establish long-term, district-level support to provide training and to support teachers as they are implementing Cognitive Coaching℠.

- Reed (2007) discovered the importance of allowing three to five years to implement Cognitive Coaching℠ in a school or district. "The teachers involved . . . did not have great success in the very first year and even faced some difficulty during the second year. However, they recognized in years three to five, they had developed strong educational techniques which accounted for their students' success" (p. 236). "Implementation of any innovation or reform is a process. It takes time to build capacity and understanding within a faculty/staff" (p. 236).

- It is important that school districts involve the teachers' union early in the process of deciding to use instructional coaches in order to make sure that they understand and support the use of instructional coaches and the Cognitive Coaching℠ process (Reed, 2007).

- When school district leaders wove Cognitive Coaching℠ into all levels of the district, veteran teachers pointed out "the improvement and incorporation of cognitive coaching in the culture and climate at various levels of the institution, whether it is the overarching district goals, changes in the classroom environments, or relationships among peers and students" (Eger, 2006, p. 57). The teachers "used terms like 'it is the way we do business here,' 'it is a culture of continuous improvement,' and 'the district is a more thoughtful district, more reflective'" (p. 57).

- Coaches need to be supported as they take training to do online coaching and as they engage in online coaching (Aldrich, 2005).

- Teachers who took training in Cognitive Coaching℠ reported that having the support of administrators helped them to be successful as they began implementing their newly acquired coaching skills (Dougherty, 2000).

- It is important for districts to make a long-term commitment to Cognitive Coaching[SM] (Johnson, 1997). If not, an elite group of those who have been trained is created. In addition, teachers learn that innovations in teaching are "here today, gone tomorrow." Without long-term support, teachers are expected to use their planning time and lunch periods for coaching.

- A systemic focus in the school district is important in implementing Cognitive Coaching[SM] so that teachers have a clear message about its importance and value and don't see it as an isolated activity (Johnson, 1997).

- It is important for teachers to have other teachers in their school who are trained in Cognitive Coaching[SM] so they will have coaching partners (Johnson, 1997).

- By practicing Cognitive Coaching[SM] skills in meetings and other district events, teachers are able to see the importance and value of coaching and internalize the skills (Johnson, 1997).

- For most effective implementation, communication between district-level and site-level administrators about expectations needs to occur (Weatherford & Weatherford, 1991). In addition, in order for Cognitive Coaching[SM] to become a norm, either or both levels need to hold a value for the program and make it a priority. Ongoing assessment must be performed on it, and continuous follow-up training must be made available.

Recommendation #2 – Enlist principals' support and modeling of Cognitive Coaching[SM].

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. Participants suggested that the leader needs to serve in a coaching role. Seven of the ten participants mentioned this theme 12 times.

- Teachers who were in schools with principal support for Cognitive Coaching[SM] were more likely to persist in a three-year project in which Cognitive Coaching[SM] was used to help teachers implement Standards-Based Education than those in schools without principal support (Edwards & Green, 1999b). Teachers tended to stay in the project when their principals participated in Cognitive Coaching [SM] training, supported the use of Cognitive Coaching[SM], and modeled coaching behaviors.

- Principal support of Cognitive Coaching[SM] is a key determinant of its success (McLymont, 2000; McLymont & da Costa, 1998).

- Administrators need to be in favor of the process and participate in the training along with the teachers when Cognitive Coaching[SM] is implemented for maximum success (Weatherford & Weatherford, 1991). In addition, they need to model the process, value it, and make it a priority.

Recommendation #3 – Be aware of implementation concerns and use tools such as the Concerns-Based Adoption Model (CBAM) Stages of Concern and Levels of Use when implementing Cognitive Coaching[SM].

- When principals have received training in Cognitive Coaching[SM] and support the instructional coach, teachers are generally more willing to work with the instructional coach and value the coaching process (Reed, 2007). In addition, the principal needs to hold teachers accountable for participating in coaching and understand that the instructional coach is supposed to serve as a coach to the teachers and not as an Assistant Principal. "Principals and the campus leadership must not only be a part of the planning process but also understand what is expected of them during the implementation process and what they must establish as expectations for their campus" (p. 234).

- Reed (2007) found that three types of resistance to using instructional coaches included "resistance as a pervasive attitude by individual teachers, . . . resistance of the union, . . . [and] resistance to change" (p. 176). "There appeared to be a synergy between the themes of campus leadership and teachers' willingness and openness to learn. As resistance increased, the opportunity for implementation of the Cognitive Coaching[SM] process decreased" (p. 226).

- Reed (2007) found that teachers' concerns about the implementation of Cognitive Coaching[SM] aligned with the Stages of Concern in the Concerns-Based Adoption Model (CBAM), developed by Hall and Hord (2001).

- Reed (2007) suggested that when instructional coaches use Cognitive Coaching[SM] with teachers, they need to explain the Cognitive Coaching[SM] process, including the different types of conversations, the various responses that they make, etc., so that the teachers will be able to understand what they are doing. When teachers understand the process, they will become more accepting of it. "While teachers may not need the eight day Cognitive Coaching[SM] seminar training model, they do need an awareness of the process and terminology used by an instructional coach, principal, or assistant principal. They need to understand how the instructional coach uses the Cognitive Coaching[SM] process as a tool" (p. 234).

- Teachers reported that the use of non-judgmental behaviors, although powerful ways of mediating the thinking of others, seemed unnatural to them at first until they

became accustomed to using them (Schlosser, 1998).

- According to Donnelly (1988), administrators who are implementing Cognitive Coaching℠ go through stages of concern and levels of use that are detailed in the Concerns-Based Adoption Model (CBAM) (Hall & Hord, 2001). They tend to implement aspects of Cognitive Coaching℠ that are similar to old methods of supervision first, and those that are unique to Cognitive Coaching℠ are implemented later. In Donnelly's study, new administrators displayed early stages of concern, and experienced administrators displayed Stage Four concerns.

Recommendation #4 – Recognize that all teachers can benefit from being involved in Cognitive Coaching℠.

- No differences were found in the effect of Cognitive Coaching℠ on the four phases of teacher thinking by "grades taught, number of years teaching, number of years in the district and number of years using cognitive coaching" (Eger, 2006, p. 54).

- No differences were found according to years of experience in how teachers reported that Cognitive Coaching℠ impacted their instructional process in the areas of planning, teaching, analyzing, applying, or overall instructional process (Alseike, 1997).

- No significant differences were found between males and females who received Cognitive Coaching℠ in their receptivity to coaching, their report of its impact on their planning, analysis, and applying, nor on their States of Mind of Efficacy, Flexibility, Consciousness, Interdependence, and overall Holonomy (Alseike, 1997). Females scored higher than males on teaching, and males scored higher than females on Craftsmanship.

- No differences were reported by number of years of teaching for the States of Mind of Flexibility, Craftsmanship, Consciousness, and Interdependence (Alseike, 1997). Teachers with 16 to 20 years of teaching experience had higher overall Holonomy, and teachers with 6 to 20 years of experience had higher Efficacy than did teachers with 0 to 5 years of experience or teachers with over 21 years of experience.

- No significant differences were found in teacher responses on the *Teacher Thought Processes* questionnaire (Foster, 1989), a measure of teacher reflective thought, for number of years of teaching experience in the areas of teaching, planning, analyzing and evaluating, and applying.

- No differences were found between elementary and secondary teachers in their perceptions of the impact that Cognitive Coaching℠ had on their thought processes (Foster, 1989).

Recommendation #5 – Create norms of collaboration.

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. She found that "creating a culture of collaboration was the most important component of a deeply embedded culture of Cognitive Coaching" (p. 88). Participants mentioned collaboration 30 times, and they used the word *team* 43 times. Participants believed that "developing a collaborative culture" was critical, with all of the participants mentioning it 27 times (p. 91). They indicated that "deeply embedded Cognitive Coaching environments work to build team mentality skills. Team mentality skills as outlined in this dissertation include the critical tools of paraphrasing, pausing, and probing questions" (p. 92). Nine of the ten participants mentioned this theme 19 times.

- Teachers indicated that norms of "leave me alone" and "you-never-want-to-shine" in the teaching culture worked against their using Cognitive Coaching℠ (Johnson, 1997). If they rose above the rest, they tended to be asked to take on additional responsibilities, adding to their already full workload.

- Teacher schedules and the structure of the buildings in which they worked tended to keep them away from their colleagues and contribute to feelings of isolation, making coaching and building relationships with other teachers a challenge (Johnson, 1997).

- When student teachers who had used Cognitive Coaching℠ in their student teaching experiences were no longer encouraged or supported in using their skills, they tended to not take the time to engage in coaching (Townsend, 1995).

Recommendation #6 – Create a climate of self-directedness.

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. She found that "self-direction emerged as the second most important component in implementing a deeply embedded Cognitive Coaching environment, just after the component of establishing a collaborative culture" (p. 103). This theme appeared 44 times. "The second largest subtheme revealed was self-managing, self-monitoring, and self-modifying," and the participants mentioned it 23 times, and all of the participants mentioned it. In addition, "the leader working to build internal resourcefulness in others was an important subtheme for establishing self-direction in the school culture" and was mentioned 14 times by 7 of the participants (p. 105). Finally, participants made seven comments about the importance of "strengthening the collective efficacy of the entire system" (p. 107).

Recommendation #7 – Invite voluntary participation.

- In order for Cognitive Coaching℠ to be successful, teachers must be able to choose whether or not to participate in the process (Krpan, 1997; Smith, 1997).

- Coaching needs to be voluntary rather than prescribed and mandated (Weatherford & Weatherford, 1991).

Recommendation #8 – Establish a trusting environment.

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. She found that "creating a trusting climate is an essential component of a deeply embedded culture of Cognitive Coaching" (p. 83). Participants mentioned trust 85 times in the interviews. Participants believed that it was important to establish relationships of trust within the school. Seven of the ten participants mentioned this twelve times. In addition, participants defined aspects of trust, which included "showing transparency, listening to others, providing open communication, and communicating honestly with each other" (p. 87). Six of the ten participants mentioned this theme 11 times. Finally, the participants talked about the importance of fostering trust in an organization. Seven of the ten participants mentioned this theme 18 times.

- Instructional coaches need to take time to build relationships of trust with the teachers whom they are coaching (Reed, 2007). They need to be "approachable" (p. 197), "respectful" (p. 197) of the teachers, and "knowledgeable" (p. 201) about instruction. Teachers need to see them as being able to provide resources, and they need to be "non-judgmental" (p. 202). They need to provide "open communication" (p. 195) so that the teachers don't feel like the coaches are above them. "Teachers worked closely with the instructional coach when there was a high level of trust" (p. 243).

- Aldrich (2005) conducted a study on online coaching and found that in order for Cognitive Coaching℠ to succeed online, participants must have trust and rapport. They must also use the skills of acknowledging, paraphrasing, and asking mediational questions. In addition, participants must engage with each other and with the content.

- Nonjudgmental behaviors contributed to the development of trust in coaching relationships (McLymont, 2000; McLymont & da Costa, 1998).

- It is important for teachers to not only establish trusting relationships with coaching

partners, but to establish trusting relationships in the larger school organization, as well (Johnson, 1997).

- A major theme in Krpan's (1997) research was that trust between all members of a coaching team is critical to success.

- Trust needs to exist in the coaching relationship (Weatherford & Weatherford, 1991).

Recommendation #9 – Emphasize the importance of reflection.

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. She found that "deeply embedded Cognitive Coaching environments place a large emphasis on reflection" (p 95). This was the most frequently mentioned theme, appearing 22 times. In addition, 6 of the 10 participants discussed the importance of people examining their mental models 11 times.

Recommendation #10 – Create a climate of learning in the organization.

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. She found that "deeply embedded Cognitive Coaching environments understand that organizational learning is the catalyst that moves an entire organization forward" (p. 107). This was the most prominent theme of the study, with 9 of the 10 participants mentioning it 28 times.

Recommendation #11 – Emphasize the importance of developing the identity of a mediator of thinking.

- Tennison (2016) examined the characteristics of deeply embedded Cognitive Coaching practice in two elementary schools by interviewing two principals and eight teachers (four teachers from each school). In addition, she examined documents and made observations at the schools. She found that it is critical that teachers hold the identity of a mediator of thinking in order to have an environment in which Cognitive Coaching is deeply embedded. In addition, educators who are trained in Cognitive Coaching travel different paths. She concluded that "all humans have their own journey in developing an identity as a Cognitive Coach" (p. 128).

Recommendation #12 – Involve teachers right away in using their coaching skills.

- Practice in using Cognitive Coaching℠ skills is essential in order to bring about the growth that is possible with Cognitive Coaching℠ (Edwards & Green, 1999a).

- When teachers became involved immediately after receiving their training in implementing coaching skills and participating in coaching, they tended to persist in a three-year project using Cognitive Coaching℠ to implement Standards-Based Education (Edwards & Green, 1999b).

- The more coaching that teachers received, the more they indicated that Cognitive Coaching℠ impacted their planning, applying, and overall teaching, as well as their interdependence (Alseike, 1997).

- Teachers who participated in seven or more Cognitive Coaching℠ training sessions scored significantly higher than those who hadn't attended any sessions, or had only attended one or two sessions, on teaching, applying, and overall instructional processes (Alseike, 1997). All of the teachers received Cognitive Coaching℠ from experienced trainers. In addition, teachers who had attended seven or more trainings scored significantly higher in the States of Mind of Efficacy and Consciousness than did teachers who hadn't attended any trainings or had attended one or two trainings, even though they had received coaching from experienced coaches.

- Teachers who received Cognitive Coaching℠ from experienced coaches, yet had never coached another teacher, scored significantly lower in teaching, applying, and the State of Mind of Efficacy than did teachers who had coached another teacher seven or more times (Alseike, 1997).

- Teachers who used Cognitive Coaching℠ more frequently obtained significantly higher scores on the *Self-Reflection Survey: Cognitive Coaching℠ Rating Scale* (Schuman, 1991) than did those who used it less (Edwards & Newton, 1994b). Subscales included planning, teaching, analyzing and evaluating, and applying.

- When teachers participated in seven or more Cognitive Coaching℠ conferences, they perceived that the conferences had a high impact on their thought processes in planning, teaching, analyzing and evaluating, and applying (Foster, 1989). Teachers who participated in 4 to 6 coaching conferences reported that Cognitive Coaching℠ had an average impact on planning, teaching, and applying, and a high impact on analyzing and evaluating. Teachers who participated in 1 to 3 coaching conferences reported that Cognitive Coaching℠ had an average impact on their thought processes in the four areas, and teachers who participated in no coaching conferences reported that Cognitive Coaching℠ had a low impact on their thought processes in the four areas.

Recommendation #13 – Structure time for Cognitive Coaching℠.

- Batt (2010) found that teachers who received Cognitive Coaching℠ to assist them in implementing Sheltered Instruction Observation Protocol (SIOP) reported that they needed to have more time for coaching. In order to save time and decrease the amount of time their students needed to spend with a substitute teacher, the teachers who were being coached employed phone conversations, email discussions, and sticky notes on manuals with their coaches.

- Teachers indicated that it was difficult to find time to do Cognitive Coaching℠ (Beltman, 2009).

- While "teachers perceived time as an obstacle that inhibited the implementation and use of the Cognitive Coaching℠ process, . . . teachers . . . identified time as a major factor in why they built such a strong relationship" (Reed, 2007, p. 203). "Leadership at both the campus and district level has to recognize the importance of building relationships and commit the time needed for development of those relationships. This is one of the most critical components, yet it is the one often overlooked" (p. 235).

- Five participants who were involved in an online coaching study said that lack of time to do online coaching and to attend training sessions inhibited the effectiveness of their practice (Aldrich, 2005). They also listed not being able to communicate in person and problems with using technology as inhibitors.

- Coy (2004) discussed the importance of administrators providing time for Cognitive Coaching℠ interactions between mentors and their protégés.

- Teachers reported a tension between appreciating having the opportunity to work and talk with their colleagues and the lack of time in the school day (Schlosser, 1998).

- Teachers who engaged in Cognitive Coaching℠ who had taken 7 to 12 days of training and had taught eight years or more indicated that shortage of time was a major hindrance to coaching and engaging in reflection about their teaching (Johnson, 1997).

- Cognitive Coaching℠ takes time, and teachers already have many demands on their time (Townsend, 1995).

- Lack of time do to coaching was listed as the #1 source of dissatisfaction with coaching (Edwards & Newton, 1994a).

- Administrators and teachers need to be creative in finding time and money to enable teachers to participate in Cognitive Coaching℠ (Weatherford & Weatherford, 1991).

In addition, they need to use Cognitive Coaching℠ on a regular basis.

Recommendation #14 – Recognize that teachers tend to use Cognitive Coaching℠ skills on an informal basis more frequently than they use the formal Planning Conversation, Observation, and Reflecting Conversation.

- Whether teachers were coached formally, including the Planning Conversation, Classroom Observation, and Reflecting Conversation, or informally, they identified Cognitive Coaching℠ as having a positive impact on their teaching (Alseike, 1997). Teachers who were coached formally scored significantly higher on a measure of Interdependence.

- Teachers using Cognitive Coaching℠ during the course of a year reported that they used Cognitive Coaching℠ skills informally more frequently than they used them on a formal basis, including a Planning Conversation, and Observation, and a Reflecting Conversation (Awakuni, 1995).

Recommendation #15 – Invite teachers to use their coaching skills in many contexts.

- Participants in an online coaching study said that text-based nonverbal cues, the sharing of asynchronous journal reflections, the ability to send private messages, and "the invisibility of the use of the maps and sentence stems" (Aldrich, 2005, p. 204) were unique features that they enjoyed as they conducted coaching conversations on the Internet. They also enjoyed the chat capability, the whiteboards, the training they received, the availability of the moderator, and the fact that their coaching sessions were archived.

- The more people participated in online coaching conversations, including the more messages that they posted and the more sessions they conducted, the more they met the conditions for effective online coaching (Aldrich, 2005).

- No differences were found in the impact of Cognitive Coaching℠ on the instructional processes of planning, teaching, analyzing, and applying, nor on the States of Mind between teachers who had been coached by the principal, a Building Resource Teacher, another teacher, or a combination of the three (Alseike, 1997).

- No differences were found in perceptions of impact on thought processes between teachers who were coached by an administrator and teachers who were coached by another teacher (Foster, 1989).

Recommendation #16 – Distinguish between coaching and evaluation.

- Teachers who had taken 7 to 12 days of training in Cognitive Coaching[SM] indicated that when principals focused on evaluating teachers rather than on supervising them, they created a climate that didn't encourage them to develop professionally (Johnson, 1997).

- Distinctions need to be made between coaching and evaluation if the principal is doing the coaching so that teachers know when they are being coached and when they are being evaluated (Weatherford & Weatherford, 1991).

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