

ABSTRACT

Cognitive Coaching: An Examination of the Reflective Journaling of Teacher Candidates

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Cognitive Coaching is a method of instruction that recognizes the strength in thinking about thinking and fosters independent learning. Cognitive Coaching is one method of instruction that can help to better prepare teachers for the classroom. The purpose of this study was to determine the impact that Cognitive Coaching had on teacher candidates as measured by comments in the reflective journals of these candidates. In this mixed methods case study design, the researcher conducted a qualitative study with embedded quantitative methods that enhanced the archived data. The archived data consisted of reflective journals originally collected from a group of junior level teacher candidates who were exposed to Cognitive Coaching. The researcher compared these journals to other archived reflective journals of teacher candidates who were not exposed to Cognitive Coaching. The reflective journals were part of a weekly assignment in a course that included a 13-15 week field experience on a campus of an urban school district located in Central Texas. When examining the archived data, the researcher identified key categories that emerged and were consistent with Costa and Garmston's

(1994) five states of mind: efficacy, flexibility, consciousness, craftsmanship, and interdependence. The findings of this study revealed that the cases exposed to Cognitive Coaching 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.

Cognitive Coaching: An Examination of the Reflective Journaling of Teacher Candidates

by

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A Dissertation

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Submitted to the Graduate Faculty of
Baylor University in Partial Fulfillment of the
Requirements for the Degree
of
Doctor of Education

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Accepted by the Graduate School
May 2012

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ACKNOWLEDGMENTS

There are many people that I would like to thank for their support and encouragement throughout this process. I would like to start off by thanking my husband and best friend, Kevin, who for the last 14 years has supported me, given me the courage to attempt new endeavors, made me laugh, cheered me up when I was sad, and loved me unconditionally. I know that with him by my side I can accomplish anything and without his support I could not have successfully completed this journey.

To my daughter and son, Emma and Nash, who have been patient and understanding when Mommy missed out on the late night “tuck ins” and early morning trips to school. I want you to know that I love you guys. To my parents, my inspiration, you kept me grounded and helped me remember the importance of family in the overall scheme in life. You two are the perfect role models of what hard work and dedication leads to. To my grandmother who inspired me to stay strong and to believe that I can accomplish anything that I set my mind to. To my big brother Ken, you have always known how to make me smile and laugh. Thanks for teaching me that no dream is ever too big and that no matter what obstacles may come your way you can always persevere. To the rest of my family and friends, I would like to thank you for the many prayers and support.

To the late Dr. Fred Curtis, thanks for allowing me the chance to prove that Baylor University was the right fit for me.

To Mrs. Bettye Keathley, thank you for going through another dissertation; these past three years have been a blast.

Thank you to all of the professors who have inspired, challenged, and helped me to endure this process. To Dr. Betty Conaway, my dissertation chair, mentor, and friend, thank you for all of the time and energy you invested in me over the years. To Dr. Larry Browning, can you believe that it has been 12 years since the first day we met? You have truly been an inspiration in my life and I will be forever grateful for the great learning opportunities that you provided for me. To Dr. Barbara Cassidy, my mentor and friend, thank you for being such a great role model, I am fortunate to have worked so closely with you on so many presentations and projects. I will miss all of our intense conversations and hope that you will continue to be my sounding board no matter where we might end up. I must also thank Dr. Tony Talbert for teaching me how to find my voice and to let it be heard. I hope that one day I am able to instill confidence in my students the way that you do. To the other members of my dissertation committee, Drs. Schwarz and Whipple, thank you for the time you spent reading and providing me with feedback to help improve my dissertation. Anne and Jessica, thanks for the support, but most importantly for your friendship. You two made this journey so much fun.

I must also thank my students for your willingness to test out my ideas and for always believing that I had the best intentions for each and every one of you. Every day that I have spent with all of you has been monumental in shaping me into the teacher educator I am today.

Finally, I thank God for the many blessings he has bestowed on me.

DEDICATION

To my parents, my first teachers

I hope that I will continue to make you proud

CHAPTER ONE

There is little agreement over the best way to fill our nation's classrooms with teachers who will be successful in today's schools. Teacher quality is considered to be a critical component of successful education; however, many still believe that good teachers are born and not made. Some may argue that a good teacher figures out how to teach on his/her own using past experiences and learning from the experiences that take place in their classrooms. This implies that when placed in a classroom setting, individuals will eventually figure out what works best for them. However, most aspiring teachers are required to go through several years of training at the university level. Many of these programs vary in the manner and degree in which each includes pedagogy, content, and clinical experiences. Trying to find a clear balance of the three can be very challenging, as well as extremely controversial.

Differing opinions can be found about what it takes to have a strong and effective teacher education program or if these programs are even needed to produce quality teachers. The ultimate goal of any program should be to produce teachers who are prepared to make decisions in the best interest of their students while using the best available knowledge and current research to do so. These are teachers who are able to ask questions, reflect on their practice, and use frameworks to interpret and improve their practice (Barkley, 2005; Lytle & Cochran-Smith, 1990). Coaching focuses on "giving teachers time and support to think metacognitively about their work in a safe atmosphere with plenty of support" (Barkley, 2005, p. 17). The current study was designed to

examine the reflective writing of preservice teacher candidates that were intentionally exposed or not exposed to cognitive coaching and to determine if this exposure or lack of exposure made a difference in their reflective writing. This chapter discusses (a) an overview of the issues, (b) statement of problem, (c) theoretical framework, (d) purpose of the study, (e) significance of the study, (f) limitations of the study, (g) summary of the methodology, (h) conclusion, and (i) definition of key terms.

Overview of the Issues

Concerns of Teacher Education

The education of teachers has been scrutinized for many years. Darling-Hammond (2006), *Powerful Teacher Education Programs: Lessons from Exemplary Programs*, acknowledged the fact that powerful teacher education programs are rare. She acknowledged that, “teacher education has long been criticized as a weak intervention in the life of a teacher, barely being able to make a dent in the ideas and behaviors teachers bring with them into the classroom from their own days as students” (Darling-Hammond, 2006, p. 6). Her research suggested that the kind of teacher education matters and that a teacher can benefit from learning about their craft.

Although there are many accounts of teachers who valued their teacher preparation or education program, there are just as many stories of teachers who did not (Darling-Hammond, 2006). Often times teacher candidates make reference to learning little in their courses that they could actually use in their classrooms. They reminisce over assignments that were a waste of time and classroom experiences that gave them a false sense of what having your own classroom is really like. There are now many

different avenues for anyone with a college degree who wants to become a certified teacher.

Teacher Preparation Programs

There are many ways for individuals to become educators at all levels. Some go to colleges or universities to study education in the traditional way. They attend a four-year college or university and apply to be admitted into the teacher education program. They spend at least one semester, up to one year student teaching and then they are off to enter their first year of teaching without knowing whether they are prepared for the first day or not. Many programs are shifting towards providing multiple opportunities for field based experiences throughout the four-year teacher education program. For those that do not attend a traditional teacher education program, there are alternative ways to obtain certification.

Alternative routes into teaching have been an increasingly attractive strategy for U.S. policy makers, who also continue to question the effectiveness of the traditional teacher education programs. Barnett Berry (2001) reports in the article, *No Shortcuts to Preparing Good Teachers*, that:

41 states now have some type of alternative that replaces the need for prospective teachers to go back to college for a major in education . . . two thirds of the 1,354 colleges and universities that prepare teachers have at least one graduate level teaching program for midcareer professionals who change to teaching. (p. 32)

In fact, one of the most significant changes in the teaching profession over the past two decades has been the rapid growth of alternative routes into teaching (Grossman & Loeb, 2010). These programs which were once rare in the 1980s are now recognized in 49 of the U.S. states (Feistritzter, 2008). Many individuals with a bachelor's degree are

using these alternative methods to become certified and to educate the young people of today. Regardless of their popularity, all of these programs are answering the call to the teacher need. The fact that there are different ways to accomplish the same goal makes the playing ground for teacher education unlevel. To level this playing ground, baselines must be set. Take learning to drive for instance. There are many ways to learn how to drive a vehicle; some attend a driver's education course, some take a class on the computer, and some learn from mom or dad. Nevertheless, everyone must pass a driving test before being issued a license to drive. The same rules apply to teaching. Research has found that traditional programs, as well as some alternative programs, are not addressing the kinds of knowledge and skills demanded from classroom teachers today (Darling-Hammond, 2006). Darling Hammond admitted that developing a teacher education program "that consistently and powerfully influences practice is not an easy matter" (p. 34). However, she agreed that learning to teach requires new teachers to understand teaching in ways quite different from their own experiences as students.

Darling-Hammond (2006) identified three problems in learning to teach: the problem of the apprenticeship of observation, the problem of enactment, and the problem of complexity. The apprenticeship of observation refers to the learning that takes place from being a student for numerous years. Learning to teach requires that new teachers not only act like a teacher, but think like teachers as well; this is what she refers to as the problem of enactment. Lastly, teachers need to do a variety of things all at once, and they must learn to deal with the problem of complexity (Darling-Hammond, 2006).

Despite all of the criticism, there is substantial and growing evidence that teacher education programs are directly linked to teacher effectiveness. Darling-Hammond

(2006) highlighted this in her study that focused on seven of what she defines as powerful teacher education programs. This study looked at a variety of public, private, large, small, undergraduate, and graduate programs. Despite the differences, all seven of these programs had many similarities in how they prepared our future educators. These common approaches were learner centered. They were supportive of focused, in-depth learning leading to powerful thinking and responsive to individual experience, interest, talents, needs, and cultural backgrounds. These programs developed teachers who learned to reach students who experienced a range of challenges and taught for a deeper understanding. “The goal of these programs was to prepare teachers not just to deliver curriculum or get through the book, but actually to ensure learning for students with a broad assortment of needs” (Darling-Hammond, 2006, p. 8)

Over the last three decades there have been an abundance of publications about teacher preparation (Berry, 2001; Borko, Liston, & Whitcomb, 2006; Darling-Hammond, 2006; Darling-Hammond & Bransford, 2005; Grossman, 1990; Hattingh & de Kock, 2008; Zeichner, 2006). While many programs focused on the organization and broad content of teacher education courses, other programs have spent time developing quick fixes in an attempt to fill in the gaps while schools continued to fail. They latched onto any new program or idea to drive instruction, instead of really addressing the issues of how to teach for understanding and ultimately understanding what you teach. Research has shown that effective teachers need to know more than just subject matter (Darling-Hammond, 2006; Darling-Hammond & Bransford, 2005; Moore, 2004). Darling-Hammond (2006) believed in order to ensure successful learning for students, “teachers need to be diagnosticians and planners who know a great deal about the learning process

and have a repertoire of tools at their disposal” (p. 80). Many of their students face a wide range of challenges, ranging from dysfunctional families, boring subject matter, scripted programs, complex curriculum, pressure of standardized testing, and multiple learning styles. Teachers must know how to connect with today’s students.

The old transmission model of teaching is no longer effective. No longer can it be assumed that the teacher is the transmitter of knowledge and the student is the receiver. This model may have been beneficial for some educators; however, it can be argued that it has left many more students behind. This model is not adequate for the knowledge based society that we live in today. It is the job of the teacher to produce students who are problem solvers and strong thinkers; this cannot happen through rote memorization. Students must take on novel problems and learn through their own inquiry to find, synthesize, analyze, and interpret information. As students do this, teachers must be able to understand, monitor, and capitalize on student thinking if they are to support a process of knowledge construction that is unique to each individual student (Darling-Hammond, 2006).

Entering the teaching profession, individuals face a job that can be very stressful and time consuming, but they are also entering a profession that comes with a large amount of responsibility. For many new and aspiring teachers, this deep sense of responsibility for students’ learning and well-being, combined with an enormous workload, can seem overwhelming. Most aspiring teachers are required to go through several years of training at the university level, and still many programs for preservice teachers fall short of providing the kinds of learning experiences that teachers need to be successful (National Research Council, 1999).

When first-year teachers join a new school, not only are they entering into a new job, but they are also faced with new surroundings. They are now assuming responsibility for a class of students of all levels, various personalities, and it is their job to instruct them using the best teaching practices. Many beginning teachers are provided with a mentor, coach, or gravitate towards a more experienced teacher to assist them during this time. However, there is no consensus on what mentors should do, what they actually do, and what novices learn as a result of mentoring. Is having a mentor enough anymore?

The coaching model helps the new teacher develop his or her skills. Barkley (2005) stated that coaching is “an opportunity for two individuals to enter into an ongoing dialogue and relationship, the focus of which is to improve skills, techniques, and behaviors that lead to professional and personal success” (p. 39). Unlike mentors, coaches can provide more frequent and continuous feedback to new teachers. When opportunities for practice and feedback are provided a teacher’s skill development will increase (Barkley, 2005). Cognitive Coaching is a method of instruction that prepares new teachers to think more reflectively and fosters independent learning (Costa & Garmston, 1994; Ellison & Hayes, 2009).

Problem Statement

The purpose of this study was to determine the impact that the Cognitive Coaching had on teacher candidates as measured by changes in their reflective journals. This study examined the reflective journals of two groups of junior level candidates in a medium sized central Texas private university. One group of teacher candidates was intentionally exposed to the Cognitive Coaching model, and the other group was not.

Theoretical Framework

Cognitive Coaching

Developed by Art Costa and Robert Garmston (1994), Cognitive Coaching is a method of instruction that recognizes the strength of metacognition and its role in fostering independent learning. Used most often in adult learning or professional development, Cognitive Coaching emphasizes problem-solving, thinking, and decision making. The coach fosters independent learning by helping to develop the way an individual reflects on a situation. Coaches support the teacher's planning, reflecting, and problem resolving through the use of a three step process (Ellison & Hayes, 2009). The coach's job is to facilitate conversations, while using questioning strategies, to encourage the development of planning, reflecting and problem-solving. Dialogue is the key to Cognitive Coaching. It is important to remember that the coach is not the expert providing solutions, but the facilitator to help lead to self reflection, realization, and/or transformation. Cognitive Coaching can be applied to specific areas of teacher professional development through three phases of interaction: Planning Conference, Lesson Observation, and Reflection Conference.

Purpose of Study

The purpose of this mixed methods case study was to determine the impact that the cognitive coaching process had on teacher candidates' development as measured by the reflective journaling of these candidates. After reviewing the literature the researcher compared two different collections of archived reflective journals taken from two predetermined groups of junior level teacher candidates. One set of archived writing

samples was collected from teacher candidates who were exposed to Cognitive Coaching and the other sample from teacher candidates who were not exposed to the Cognitive Coaching.

The following overarching research question guided the study: How did cognitive coaching impact the reflective journaling of teacher candidates? To address this overarching question, the following sub-questions were formulated.

- 1) Did teacher candidates exposed to Cognitive Coaching show more confidence or a greater sense of efficacy in their reflective journals?
- 2) Did teacher candidates exposed to Cognitive Coaching show more flexibility in their reflective journals?
- 3) Did teacher candidates exposed to Cognitive Coaching show more consciousness of the act of teaching in their reflective journals?
- 4) Did teacher candidates exposed to Cognitive Coaching show more craftsmanship in their reflective journals?
- 5) Did teacher candidates exposed to Cognitive Coaching display more interdependence in their reflective journals?

Significance of Study

Exposure to reflective thinking has become an important component of teacher education programs field experiences and can be beneficial in shaping a person's attitudes, beliefs, knowledge, and practices (Fry & McKinney, 1997; McIntyre, Byrd, & Foxx, 1996; Myers, 1996). Studies have also emphasized the importance of thinking about and reflecting on your teaching experiences (Cruickshank, 1987; Cruickshank, Jenkins, & Metcalf, 2006; Han, 1995). The need for the current study is threefold. First,

there exists a need for studies investigating the impact of cognitive coaching among teacher candidates. Second, through the integration of theory and practice, Cognitive Coaching encourages teacher candidates to engage in thinking about their thinking. Third, with exposure to the Cognitive Coaching teacher candidates will go into their first year of teaching with a strong repertoire of metacognitive skills that will positively impact their teaching and encourage reflecting on their practice.

Limitations and Assumptions

There are many limitations to this study. The major limitations are listed below.

1. The study was limited to teacher candidates on a medium sized private university in Central Texas.
2. The study assumed that the reflective journals represented teacher candidates' perceptions and experiences.
3. The study assumed that the Cognitive Coaching model was fully implemented by the course instructor.
4. The study assumed that all reflective journals that were written were true statements.
5. The study assumed that the procedures to check for interrater reliability confirmed consistency in the coding process.
6. The study assumed that the content of the reflective journals was coded correctly.
7. It is assumed that there were no significant differences between the junior level teacher candidates in spring 2010 and the junior level teacher candidates in spring of 2011.

8. The study assumed that the results found are because of the implementation or lack of Cognitive Coaching.

Methodology

Qualitative research assumes that knowledge is constructed rather than discovered (Stake, 1995). According to Merriam (2009), qualitative researchers are interested in “understanding the meaning people have constructed” and “how people make sense of their world and the experiences they have in the world” (p.13). Quantitative research is conducted to gain a better understanding of the relationship among variables or to compare groups (Creswell & Plano Clark, 2011). This study aimed to construct meaning through the examination of reflective journals of teacher candidates who were exposed or not exposed to Cognitive Coaching.

The researcher used a mixed methods case study design to examine archived data. The archived data were originally collected from a group of teacher candidates. The reflective journals were collected as part of a weekly assignment as part of a course that included a 13-week field experience on a campus of an urban school district located in Central Texas.

Conclusion

Despite the issues associated with teacher preparation, it is evident that teacher preparation programs play a significant role in the development of teachers. When teachers are provided with the opportunity for practice and feedback their skill development will increase (Barkley, 2005). The coaching process provides the opportunity to build relationships and provides support, feedback, and celebration, while

at the same time allowing for the person being coached to take ownership (Barkley, 2005). People's dependence on others to tell them how they are doing ultimately eats away at confidence in their own ability to assess their own behavior (Colleen & Colleen, 2004). Cognitive Coaching is becoming a viable method that allows people to metacognitively monitor and assess their own performance. The ultimate goal of Cognitive Coaching is teacher autonomy with teachers able to self-monitor, self-analyze, and self-evaluate (Garmston, Linder, & Whitaker, 1993).

The purpose of this study was to determine the impact that Cognitive Coaching has or does not have on the reflective journaling of teacher candidates. Both qualitative and quantitative research methods were used. Findings of the current study are significant for teacher educators and teacher preparation programs, as well as for the broader research community in the field of education.

Definition of Terms

1. *Autonomous* – self governing, independent; comes from the Greek word *auto* meaning “self” and *nemein* meaning “to hold sway” (Costa & Garmston, 1994, p. 129).

2. *Coaching* – a relationship between two equals, one of whom is committed to making personal and professional improvements (Barkley, 2005, p. 4).

3. *Cognitive Coaching* – a concept developed by Art Costa and Robert Garmston (1994). This is a method of instruction that recognizes the strength of metacognition (thinking about thinking) and its role in fostering independent learning.

4. *Consciousness* – being self directed; a gut feeling. Being aware and responding to a variety of cues and keeping your students and yourself on task (Costa & Garmston, 1994).

5. *Craftsmanship* – holding a clear visions and goals; taking pride in your work and striving for precision. One who seeks perfection and elegance, refinement and specificity (Costa & Garmston, 1994).

6. *Efficacy* – an individual’s belief that he or she can successfully execute the behavior required to influence outcomes and secure belief in one’s own coping abilities (Costa & Garmston, 1994).

7. *Flexibility* – the ability to step beyond yourself and look at a situation from a different perspective. Each experience is a learning experience (Costa & Garmston, 1994).

8. *Field Experiences* – a variety of early and ongoing field-based opportunities in which candidates may observe, assist, tutor, instruct, and/or conduct research (Baylor University School of Education, 2011).

9. *Holonomy* – making a connection; comes from the Greek word *holos* meaning “whole” and *on* meaning “part” (Costa & Garmston, 1994, p. 129).

10. *Holonomous* – autonomous individuals who are self referencing and draw on their own strengths to grow (Costa & Garmston, 1994).

11. *Interdependence* – one does not have to do everything alone; they can find support in others (Costa & Garmston, 1994).

12. *Metacognition* – is a complex cognitive process that requires knowledge of and control over one’s own mental processes. This is sometimes referred to as thinking about your own thinking (Nath & Cohen, 2011).

13. *Mentoring* – someone who provides guidance and individualized assistance to promote retention and success for new teachers (Nath &Cohen, 2011).

14. *Modeling* – demonstrates discrete behaviors and skills (Barkley, 2005).

15. *Preservice teacher* – one who has declared a major but has not yet completed training to be a teacher.

16. *Professional Development Schools* – a P-12 school, in partnership with the School of Education, with a mission to prepare new teachers and other educators, support professional development, support inquiry directed at the improvement of professional practice, and improve student learning (Baylor University School of Education, 2011).

17. *Reflection* – a process through which we interpret (and reinterpret) the techniques of professional practice (Bain, Ballantyne, Mills, & Lester, 2002; Cruickshank, Kennedy, Williams, Holton, & Fay, 1981).

18. *Reflective Writing* – a practice in which writers describe an event or memory, adding personal reflection on the meaning of the event.

19. *University Liaison* – the university-based representative who has primary responsibility for facilitating communication between the university and school. Responsibilities also include, teaching seminar site-based course, observing and conferencing with candidates, and interacting with PDS trained campus teachers (Baylor University School of Education, 2011).

Significance of the Problem to the Researcher

As a former science coach myself I have always wondered if the job that I did really impacted the teachers as much as the data showed. A few years ago I was asked to apply for a newly created job in the Central Texas school district where I had taught. The job was titled “Science Model Teacher.” When hired we were told that we would each be placed at a low performing campus and that our job was to serve as an additional

resource for teachers, to help increase their test scores. On my campus each classroom teacher received at least three coaching sessions which included an observation, model lesson, and a debriefing session. During the debriefing session the coach and teacher went over both the observation and model lessons and came up with four to five goals that the teacher sets to help improve their teaching. They also received pacing calendars, with resources listed, to help with lesson planning and making sure all standards were taught. After the first year there were a total of nine model teachers placed on five different low performing campuses in the areas needed. At all nine campuses the test scores improved tremendously. On my campus the students went from 25% to 52% passing on the Science state test. The following year the campus improved to 56%. Reflecting back on this experience I have always known the planning, professional development, mentoring, modeling, scheduling, observing, and one-on-one conferencing were key contributors to the success of my campus. However, I was never really sure about why, or which methods the teachers found most helpful. Even today I have a hard time figuring out what contributed to this success and if the teachers felt the same way that I did about the coaching process. What really made this coaching job effective? Did the teachers feel that I was helpful or just another person hired to check up on teachers? As a graduate teacher of record I still struggle with the question, “What makes an effective coach?”

Now that I currently serve as the University Liaison at a local central Texas Elementary PDS campus I find myself back in a similar situation. For the past two years I have been in charge of supervising field-based experiences for junior level teacher candidates enrolled in a Central Texas University. One of my most important

responsibilities is to make sure that each teacher candidate is prepared for his/her internship experience. I am always eager to find ways to best prepare my students and want to know that the methods that I am using have a positive impact on their learning. I believe that reflection does play an important role in the development of these students and with the addition of the cognitive coaching model I have noticed my students becoming more self prescriptive. I am very curious to see if the Cognitive Coaching model has indeed truly impacted the reflective writing process of my students. If I can encourage my students to continue to think about their thinking, my coaching will help develop their individual growth towards what Costa & Garmston (1994) refers to as the five “States of Mind.” The five States of Mind are: efficacy, flexibility, craftsmanship, consciousness, and interdependence.

Overview of Dissertation Chapters

Chapter Two covers an extensive review of the literature that examines the major areas of research. Chapter Three provides a description of the research and methodology. It focuses on the questions of the study, research design, data collection, and data analysis. Chapter Four provides a presentation of the results and Chapter Five discusses the findings.

CHAPTER TWO

Literature Review

This chapter gives an overview of relevant literature pertinent to the examination of whether or not Cognitive Coaching impacts the reflective journaling of teacher candidates. An overview of how teachers are prepared begins this chapter. The relationship between effective teacher preparation and the use of new approaches to prepare teacher candidates follows. Next, the need for professional development such as coaching and Cognitive Coaching is outlined. To conclude the chapter, Costa and Garmston's (1994) five "states of mind" are defined and information pertaining to the power of reflection is discussed.

Teacher Preparation

Given what we know about teacher preparation the question still remains the same, "how can we create teacher education programs that are effective in enabling teachers to acquire the knowledge, skills, and disposition that will allow them to succeed" (Darling-Hammond & Bransford, 2005, p. 390)? Many programs have been criticized for having little connection to practice, being overwhelmingly theoretical based, or lacking a consistent philosophy of teaching across the program (Darling-Hammond & Bransford, 2005).

The dominant mode of teacher preparation prior to the 1980s consisted of course work on a university campus that was followed by a semester of student teaching

(Huling, 1998). This one semester model sometimes lacked research in best practices or improvements in teaching (Ghee, 1996), but allowed for joint supervision of the teacher candidate by university faculty and supervising public school teacher (Purdum-Cassidy, 2005). Currently, many teacher education programs in the United States are still built around a “collection of methods courses in which prospective teachers learn about what methods exist for teaching particular subjects and how they are grounded in educational theory and research” (Lampert, 2005, p. 36).

For those that do not attend a traditional teacher education program, there are alternative ways to get certified to teach. Over the past two decades there has been rapid growth of alternative routes into teaching (Grossman & Loeb, 2010). Proponents of alternative certification would argue whether or not traditional teacher preparation programs are needed to produce quality teachers. They view state certification rules and regulations as “unnecessary hurdles and barriers that prevent talented individuals from becoming teachers” (Humphrey & Wechslerp, 2007, p. 6). Since teacher shortages have become such a commonality in many districts, many administrators hire teachers who are certified regardless of the type of program they have completed or attended. With teacher shortages growing, alternative routes into teaching have become increasingly popular (Berry, 2001). Many states now have some type of alternative program that replaces the need for degreed individuals to return to college for a degree in education.

Alternative certification programs come in many forms. The intensity level for teacher preparation within each program can range from program to program. There are nontraditional graduate-level teacher education programs, short-term alternative licensure programs that reduce requirements for earning a state license, and emergency

certification hiring (Berry 2001). Perhaps one of the less popular among traditionally trained educators is the Non-University Certification Programs. These programs are not affiliated with any institute of higher education and are at times offered via the Internet (Baines, 2006). Regardless of their popularity, all of these programs are producing the teachers that are used to fill our nation's classrooms.

Professional development schools, referred to as PDSs, are partnerships formed by P-12 schools and teacher education programs (Purdum-Cassidy, 2005). The goal of a PDS program is to share in the responsibility of preparing teacher candidates, to develop faculty members, and improve practice that leads to improvement in student achievement (Levine, 2002). With the development of PDS partnerships, teacher preparation programs have shifted their design to focus on a common vision, better alignment of theory and practice, and increased field experiences (Kelly, Stetson, & Stetson, 1997).

Studies have suggested that teachers who graduate from highly developed Professional Development School based teacher education programs feel better prepared to teach and more knowledgeable (Darling Hammond & Bransford, 2005; Gettys et al., 1999; Sandholtz & Dadlez, 2000; Stalling, Bossung & Martin, 1990; Yerian & Grossman, 1997). These programs do a great job of combining university coursework and classroom teaching opportunities to maximize students' experiences. At these sites university faculty work with school faculty to create an experiential learning environment. Teacher candidates are able to test the knowledge acquired from their courses in real life classroom settings and are able to learn from these experiences (Grossman, 1990). Darling-Hammond and Bransford (2005) identified key features that were found in highly developed PDSs:

More extensive experience within the school from the prospective teachers, more frequent and sustained supervision and feedback, more collective planning and decision making among teachers at the school as well as among school- and university-based faculty, and participation in research and inquiry about teaching and teacher education by novices, veteran teachers, and university faculty. (p. 415)

Professional development schools provide in-depth, clinical experiences that are designed to help teacher candidates build confidence and the skills necessary to handle daily occurrences that are encountered in teaching (Holmes Group, 1986). Levine (2002) attributed a crucial part of a teacher candidate's education to the clinical component in their preparation. In the last few decades, there has been a rapid movement towards PDS partnerships (Abdal-Haqq, 1998). Even though there are differences among PDS supporters, all agree that these programs must provide clinical settings for teacher candidate, engage educators in professional development, support inquiry that advances the knowledge of schooling, and provide exemplary education for P-12 students (Teitel, 1999).

Separation of coursework and clinical experience can no longer be the norm in teacher preparation. University coursework and field experiences should complement one another. Teacher educators need to emphasize the conceptual tools for teaching while providing teacher candidates opportunities to engage in situations to practice these strategies in a classroom setting (Grossman, Hammerness, & McDonald, 2009). There is a growing awareness that teachers gain pedagogical content knowledge from their experiences in the classroom (Grossman, 1990), and the importance of having practice at the core of the curriculum is obvious. Programs are shifting from the need to “teach upon the conceptual underpinnings of teaching” to focusing more on “concrete practices new teachers may need to enact when they begin teaching” (Grossman et al., 2009, p. 275).

Becoming a teacher requires an individual to learn a great deal of subject matter and methods of best practice; however it also requires a person to be a decision maker and reflective practitioner (Zeichner & Liston, 1996).

Unfortunately, learning about a method or skill does not qualify a person to teach that strategy. Take for example a professional athlete; they will put in hours and hours of practice prior to performing. Not only are they expected to learn the methods of their sport, but they must practice and practice to be able to perform effortlessly with minimal or no mistakes. Many of these professional athletes have been playing their sport for their entire life, while being advised and critiqued by coaches or trainers. They put in hours and hours of practice and study the latest techniques in order to perfect their skills. Their ultimate goal is to grow and develop into a top rate athlete in order to perform at a high level. This same philosophy and work ethic should apply when becoming a teacher. The challenge is that the teaching profession lacks the professional status given to other professions (Lampert, 2005). How could something that looks deceptively simple be so complex? Being able to and “learning how to teach requires getting into relationships with learners to enable their study of content. It is here that one learns how to teach students, act back” and respond to their actions (Lampert, 2005, p. 36). If teaching is not something naturally developed by individuals on their own, then teacher educators must develop new approaches to prepare teacher candidates for such a complex practice (Grossman, 1990; Grossman et al., 2008). This entails taking advantage of every opportunity for practice and being able to make meaning from direct experiences.

Mentoring and Teacher Education

Since the mid-1970s, mentoring has been given much attention (Onchwari & Keengwe, 2008). The concept dates back to ancient Greece in reference to Odysseus' son, in Homer's *Odyssey*, and the counsel he received from a friend of the family while his father was away fighting the Trojan War. Murray and Owen (1991) believe that this concept has greatly contributed to the way the term is currently perceived. Shea (1994) defined a mentor as a person who is looked at as a guide, teacher, advisor, helper, or a trusted friend. Jeruchim and Shapiro (1992) identify a mentor as a beneficial but close relationship formed between an older person who is more experienced than the younger less experienced person. Barkley (2005) defined a mentor as a person who has "a certain level of expertise and is assigned to assist someone ostensibly with less knowledge or experience" (p. 23).

Mentors in education are widely used to support novice teachers and increase teacher retention (Feiman-Nemser & Parker, 1993). "Professional development practices such as mentoring provide one-to-one guidance and ongoing on-site support . . . they are successful because learning depends on the collegiality of teachers" (Onchwari & Keengwe, 2008, p. 20-21). Davis, Middaugh, and Davis (2008) defined mentoring as an informal process that involves a long term relationship. Mentoring provides a way for teachers to enhance their skills (Onchwari & Keengwe, 2008) and aids in the development of unqualified teachers (Saluja, Early, & Clifford, 2002). According to Weaver (2004) mentoring can aid in the development of new practices and is an effective way to train new teachers. However, it is important that the novice teacher feels safe to make mistakes and understands that judgments made about instructional effectiveness are

for their benefit. Mentors are able to relate to the teachers concerns because they have more than likely experienced similar feelings in the past.

According to Barkley (2005), mentoring has gone from “Homer to the homeroom, as many school districts have in place mentoring programs, with participation often mandatory for beginning teachers” (p. 24). Highly useful for new and beginning teachers, mentoring serves as a way to familiarize a teacher with how things work and what is expected of them (Barkley, 2005). Davis et al. (2008) believed that both mentoring and coaching improve performance; however coaching unlike mentoring is a formal process that facilitates positive change enabling the person being coached to uncover potential that might have gone unused or unnoticed. Barkley (2005) suggested that coaching “empowers one to bring strengths to fruition” and mentoring, although empowering “assumes that something is lacking that needs to be fixed” (p. 25). Coaching enables a teacher to work on specific issues that they need or want to work on and allows teachers to reach their full potential. Productive teacher training includes opportunities for practice with feedback and coaching in the authentic teaching context (Joyce & Showers, 1980).

Professional Development and Teacher Preparation

Traditional professional development assumes that when teachers learn and develop new skills, they are automatically applied in the classroom. Previous studies on staff development point out that there is no assurance that learned knowledge and skills will transfer (Barkley, 2005; Joyce & Showers, 2003). Traditional workshops attended by teachers do not provide an adequate amount of time to make lasting changes or long term improvement in teaching practices (Klingner, 2004; Loucks-Horsley, Hewson,

Love, & Stiles, 1998; Powell, 2005). For a teacher’s practice to change, professional development must be more than a workshop (Powell, 2005). Effective professional development, according to Bait (2010), based on the findings of Hawley and Valli, includes eight principles:

teachers decision on what they need to learn; teachers’ goals and their students performance; contextualized learning in schools; collaborative problem solving; ongoing and sufficient support; rich information; opportunities to develop theoretical understandings; and training that is part of a comprehensive reform process. (p. 999)

Joyce and Showers (2002) believe that characteristics of effective professional development include modeling, practice, feedback, and continuous reflection overtime. In the book, *The Coaching of Teaching*, Joyce and Showers (2002) studied the transfer of learning by examining the impact of different types of training. They found that when training that included theory, modeling, practice, feedback, and coaching was most beneficial to skill development and accurate use in class. Results can be seen in Table 1.

Table 1
Transfer of Learning by Types of Training

Training Provided	Skill Development Percentage	Accurate Use in Class Percentage
Theory/Knowledge	5	0-5
Theory/Modeling	50	5
Theory/Modeling/Practice/Feedback	90	5
Theory/Modeling/Practice/Feedback/ Coaching	90	75-90

Note: Source - The Coaching of Teaching by Joyce and Showers (1982)

As seen in Table 1, when coaching was added there was an increase in the transfer in learning. Coaching provides a variation from the traditional form of professional development that allows a teacher to take ownership in their own improvement (Barkley, 2005) and for a transfer in learning to occur (Joyce & Showers, 1982). With the addition of coaching to a teacher's professional development, implementation of skills in the classroom will increase (Barkley, 2005).

Coaching: The New Form of Professional Development for Teacher Education

In support of changes in classroom practice, school systems are seeking new ways to support staff through professional development activities. One significant shift is the move toward job embedded, ongoing professional development (Sparks & Hirsch, 1997). Often referred to as coaching, peer coaching, or mentoring, this form of professional development typically involves employing an external staff member, with both deep content knowledge and specialized training in supporting staff development activities. The primary defining characteristics of peer coaching focuses on using effective instructional practices, modeling of instructional strategies with teachers' students, and the development of a learning community (Barkley, 2005). The coach functions in a wide variety of roles, all of which are highly personalized and varied based upon the context and needs of the learner. This makes it very difficult to clearly define the roles of a coach or mentor (Wildman, Magliaro, Niles, & Niles, 1992). Barkley (2005) agrees that both mentors and coaches empower a person to achieve; however, mentoring assumes that "something is lacking and in need of fixing" where as coaching "empowers one to bring strengths to fruition" (p. 25). Coaching allows the person being coached to develop the attitude that they "have the strengths; let's discover them and fine-tune them"

(Barkley, 2005, p. 25). The primary roles of a coach tend to fall into the following functions: role model, instructor/promoter of thinking skills, teacher, motivator/promoter of realistic values, and mentor.

Both mentoring and coaching are important in the professional development of teachers (Costa & Garmston, 1994; Showers & Joyce, 1996). Each one has its own strengths and purposes; however, “coaching tends to be more powerful and stems from a partnership of support and development” (Barkley, 2005, p. 24).

Many ask the question, why coaching? Costa and Garmston (1994) have identified four compelling reasons that respond to this question.

1. Coaching enhances the intellectual capacities of teachers, which in turn produces greater intellectual achievement in students.
2. Few educational innovations achieve their full impact without a coaching component.
3. Working effectively as a team member requires coaching.
4. Coaching develops positive interpersonal relationships which are the energy sources for adaptive school and cultures and productive organizations.

(pp. 6-8)

With the addition of coaching to teacher’s professional development, implementation of skills in the classroom will be enhanced (Barkley, 2005). Specifically, the Cognitive Coaching process assists any group or individual in becoming more self-managing, self-monitoring, and self-modifying (Ellison & Hayes, 2009).

Cognitive Coaching

Another form of coaching known as Cognitive Coaching is a concept that was developed in 1984 by Art Costa and Robert Garmston. Cognitive Coaching is a method of instruction that recognizes the strength of metacognition and its role in fostering independent learning (Costa & Garmston, 1994). The Cognitive Coaching method “draws on an impressive list of well-respected researchers” (Ellison & Hayes, 2009, p. 75). To better understand Cognitive Coaching we need to examine the clinical supervision model:

Careful analysis of the research on training programs in clinical supervision reveals two distinct models of clinical supervision. One model is based on the work of Cogan and Goldhammer and most frequently uses five stages: pre-observation (planning) conference, observation, analysis and strategy, post observation (feedback) conference, and post-conference analysis. . . . The second model is the hunter clinical supervision, referred to as the, Hunter model, in which the pre-observation conference is eliminated or reduced since the focus for the observation has been predetermined by the observer using a checklist to determine if the seven elements of effective instruction are used. (Pavan, 1985, p. 4)

Cogan and his colleagues discovered a serious problem with the role of the supervisors at Harvard’s Master of Arts teaching program (Costa & Garmston, 1994). During this time, in the late 1960s, the supervisors were the experts and were placed in a role that was superior to the teacher (Costa & Garmston, 1994). Cogan was concerned that the only thing that teachers were being told by their supervisors was “what should be changed and how to do it” (Costa & Garmston, 1994, p. 15). During conferences the supervisors did all the talking and teachers did all the listening. They were concerned with offering solutions to problems that often times only concerned them and did not serve the needs of the teacher. Cogan and his colleagues believed that supervisors were not focusing on or meeting the needs of the teachers (Costa & Garmston, 1994). To solve

this dilemma Cogan and his colleagues came up with the clinical supervision model (Costa & Garmston, 1994). The purpose of this model was to develop a teacher who was responsible, analytical of their own performance, self-directing, and willing to receive help from others (Costa & Garmston, 1994). With the development of this new model, supervisors and teachers now worked together and valued each other's contributions. The clinical supervision model consisted of eight phases organized around conferencing and planning with the teacher before the lesson, the observation, and follow-up conversation (Costa & Garmston, 1994).

Deviating from the works of Cogan and his colleagues and very similar to their model came the second application of clinical supervision referred to as the Hunter model. This model looked at the monitoring of teachers' classroom behaviors while focusing on Hunter's essential elements of instruction, feedback of these results, reinforcement of desired practice, and a prescription for remediation of teachers' performance (Pavan, 1985). In contrast to Cogan's clinical supervision model, this model preserves an expert-learner relationship with a detailed observation and analysis (Costa & Garmston, 1994). The observer carefully looks for certain elements being used in the lesson. Cogan's clinical supervision model and the Hunter model were both usually conceptualized as laying the foundation for the creation of Cognitive Coaching, which is now informally known as the third type of clinical supervision (Costa & Garmston, 1994).

Unlike the clinical supervision model, which was used for evaluation purposes, Cognitive Coaching differed because "the single purpose is to help the teacher improve instructional effectiveness through reflection" (Bait, 2010; Garmston & Linder, 1993).

Cognitive Coaching was initially developed so that principals could support teachers in planning, reflecting, and problem-solving (Ellison & Hayes, 2003, 2009); however, it quickly expanded to support other areas. Cognitive Coaching provides a way to increase teacher efficacy (Edwards & Newton, 1995). The ultimate goal of Cognitive Coaching is “to produce self-directed persons with the cognitive capacity for high performance, both independently and as a member of a community” (Costa & Garmston, 2002, p. 16). The idea is that the coach fosters independent learning by promoting metacognitive thinking. Cognitive Coaching can be applied to specific areas of teacher professional development and “at its most basic level, cognitive coaching is a set of nonjudgmental practices built around a planning conference, lesson observation, and reflection conference” (Costa & Garmston, 1994, p. 13). The three step process in Cognitive Coaching is outlined below.

Step 1 of Cognitive Coaching: The Planning Conference

According to Costa and Garmston (1994),

the planning conference is both powerful and essential to the coaching process for five reasons: it builds trust, focuses the coach on the teacher’s goals, provides for a detailed mental rehearsal of the lesson, establishes the parameters of the reflecting conference, and promotes self-coaching. (p. 18)

One of the main goals of the coach throughout this process was to maintain and establish trust with the teacher. If trust is not established it is impossible for learning to occur. For this reason it is crucial that the planning conference is not controlled by the coach, but by the teacher. The coach must encourage the teacher to suggest the time for the visit, choose the data that needs to be collected, how the data will be recorded, and where the coach will observe in the classroom. Deciding on these specifics is imperative for building strong trusting relationships and positive experiences between coach and

teacher. This step helps ease into the next part of the coaching process (Costa & Garmston, 1994) and makes it more comfortable for the coach to observe the lesson.

Step 2 of Cognitive Coaching: Observing the Lesson

While observing the lesson the coach monitors the lesson and collects data regarding the teaching behaviors and student learning. This information was initially discussed in the preconference and was requested by the teacher. The coach may use a variety of data collection methods including classroom maps of teacher movement, audio and video recordings, verbal interaction patterns, student participation, on task counts, or frequency counts of teacher's behavior (Costa & Garmston, 1994). Data collected must be meaningful and relevant to the teacher's self-improvement efforts. The coach must refrain from offering judgments. The intent is to cast the teacher in the role of experimenter and researcher and the coach in the role of data collector (Costa & Garmston, 1994).

Step 3 of Cognitive Coaching: The Reflecting Conference

The reflecting conference is best if it takes place a few days after the lesson. It is important to allow the "teacher time to reflect on the lesson before participating in the conference and it encourages deeper analysis and self-reflection" (Costa & Garmston, 1994, p. 21). Costa and Garmston (1994) recommend that when the conference begins, the coach should first encourage the teacher to share their feelings about the lesson and have them provide examples that validate these feelings. Having the teacher summarize their perception of what went on during the lesson is crucial to making sure that the only judgments being made are by the teacher and not the coach. The job of the coach is to

“facilitate the teacher’s analysis of the lesson goals by sharing data and using reflective questioning” (Costa & Garmston, 1994, p. 22). As the conference continues it is crucial for the coach to encourage the teacher to identify successful and unsuccessful activities, provide plausible reasons for their success or lack thereof, and focus on how changes might improve their teaching or student learning (Hayes & Ellison, 2003).

The Planning Conference, Observation, and Reflecting Conference are the key components that outline the Cognitive Coaching process. “This process can become complex as the coach tries to nurture a trusting relationship while understanding and facilitating teacher learning and movement toward the goal of holonomy” (Costa & Garmston, 1994, p. 22). At the center of this model are the states of mind. In the original work of Costa and Garmston, these five states provided a conceptual framework for individuals to become holonomous and self-directed.

The Five States of Mind in Cognitive Coaching

The job of the coach, in the Cognitive Coaching process, is to aid in the development of the teacher’s metacognitive skills. When the ability to think metacognitively is lacking, no amount of experience alone will fix this. These capacities will develop through mediated processing and by reflecting upon experiences (Costa & Garmston, 1994). The five states of mind, efficacy, flexibility, consciousness, craftsmanship, and interdependence, are the catalysts and energy sources that fuel an individual’s holonomous behavior (Costa & Garmston, 1994). These states of mind are at the center of Cognitive Coaching, and they serve both collectively or individually. Costa and Garmston (1994) created this framework with the belief that teachers have the

ability to take new information, reflect on their teaching, and self-direct their actions to be more productive.

Costa and Garmston (1994) defined three attributes that characterize the states of mind: transitory, transforming, and transformable. A person's state of mind can vary, increase, or be influenced by another person, depending on many factors.

Attributes that Characterize the States of Mind

- They are transitory. These states of mind come and go and will vary depending on a variety of factors.
- They are transforming. If performance increases the state of mind can heighten and if performance decreases the state of mind will lower. Therefore, in order to perform at the highest level one must think efficaciously.
- They are transformable. Your state of mind and capacity can be altered in the moment either by one's self or by other people. This allows one to change their state depending on how they feel or are made to feel.

Efficacy, flexibility, consciousness, craftsmanship, and interdependence if properly cultivated will positively contribute to the growth and development of preservice teachers.

The First State of Mind in Cognitive Coaching: Efficacy

The growth of self-efficacy continues to evolve throughout life as people acquire new skills, experiences, and understandings. Albert Bandura (1995) defines self-efficacy as "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). Costa and Garmston (1994) define efficacy as

an individual's belief that he or she can successfully execute the behavior required to influence outcomes and secure beliefs in one's own coping abilities. Efficacious people believe that things happen for a reason and believe that the harder they try will make a difference. They are optimistic, confident, and feel good about themselves. These self-reliant individuals believe that they can impact a situation if involved and know that they are influential when implementing change (Fullan, 1982).

Teacher efficacy has become an important part of teacher education. Teachers with high levels of efficacy know that their actions will make a difference (Ellison & Hayes, 2009). When teachers show high levels of efficacy and are confident in their teaching abilities, they are more likely to increase their student's mastery of basic skills (Ashton & Webb, 1986; Costa & Garmston, 1994; Rosenholtz, 1989). Teachers with a high sense of efficacy show higher levels of planning and organization (Milner, 2001; Purdum-Cassidy, 2005) and are more accepting to new ideas and more likely to experiment with new teaching methods (Guskey, 1988; Milner, 2001; Purdum-Cassidy, 2005). Costa and Garmston (1994) believe that teachers with robust efficacy will persevere longer, expend more energy in their work, set more challenging goals, and persevere by turning failures into learning experiences. These teachers shape themselves accordingly to learn from their experiences and can identify what they know, need to know, or do not know, and are willing to learn from their experiences (Hayes & Ellison, 2003).

The Second State of Mind in Cognitive Coaching: Flexibility

Costa and Garmston (1994) define flexibility as the ability to step beyond and look at a situation from a different perspective. This state of mind "allows us to move

beyond our natural tendencies toward egocentricity” (Ellison & Hayes, 2009, p. 77). A flexible teacher is open to understanding multiple perspectives (Ellison & Hayes, 2009), is able to shift perspectives quickly, and uses a wide repertoire of thinking and processing skills (Hayes, 2003). They take anxious feelings related to confusion or uncertainty and make sense of them while keeping an open mind. When stuck they have the ability to generate ideas and use multiple options or resources to move forward. Looking at a situation from a different perspective allows flexible teachers to shift swiftly among different points of view.

Costa and Garmston (1994) refer to flexible individuals as risk takers who look at life as a learning opportunity with a series of problems to be solved. Perkins (1983) refers to flexible individuals as creative people who live life on the edge. They are never satisfied and are always willing to find new ways to grow. The flexible teacher can balance a variety of activities happening all at once, while accommodating multiple learning styles (Costa & Garmston, 1994). They enjoy being challenged and finding solutions to problems.

The Third State of Mind in Cognitive Coaching: Consciousness

Consciousness is being aware and having the ability to respond to a variety of cues while keeping yourself and students on task (Costa & Garmston, 1994). Costa, Garmston, Saban, Battaglia, and Brubaker (2003) define consciousness as “the capacity to monitor and reflect on ourselves. It is the source of self-improvement and distinguishes us from all the other forms of life” (p. 128). Conscious people are self directed individuals who are knowledgeable about their feelings, thoughts, and surroundings. They are aware and conscious “of events both external and internal” and

“are able to direct their course” while in a state of metacognitive consciousness (Costa & Garmston, 1994, p. 138-139). Conscious people recognize the development of new strategies for thinking (Duell, 1986) and make progress towards their goals by monitoring their own thoughts and behaviors (Costa & Garmston, 1994). Consciousness allows the examination of the other states of mind and when opportunities for reflection are provided will lead to self awareness (Costa et al., 2003; Ellison & Hayes, 2009).

The Fourth State of Mind in Cognitive Coaching: Craftsmanship

Ellison & Hayes (2009) describe craftsmanship as a personal drive that leads an individual to excellence. This state of mind focuses more on quality rather than perfection. In order to appreciate craftsmanship it is important to think like “expert performers: musicians, artists, teachers, craftspersons, and athletes” (Costa & Garmston, 1994, p. 137). Craftsmanship means holding a clear vision and goals, taking pride in one’s work, and striving for precision. Like a performer, this is a person who seeks elegance, refinement, and specificity (Costa & Garmston, 1994). Monitoring progress of their goals is important (Costa & Garmston, 1994) and the craftsmanlike teacher continuously refines their performance and exhibits high standards (Costa & Garmston, 1994; Costa et al., 2003). To develop craftsmanship, it is crucial to create experiences that allow preservice teachers to assess, refine, and improve their performance (Ellison & Hayes, 2009).

The Fifth State of Mind in Cognitive Coaching: Interdependence

Interdependence is a term that has been used throughout history by many theorists. It is a resource that allows an individual to see themselves as part of something

larger and it gives them the ability to move beyond a self centered view of the world (Ellis & Hayes, 2009). Interdependence refers to a person's ability to learn from others and contribute to the common good (Costa & Garmston, 1994; Costa et al., 2003). Interdependent teachers share common goals amongst their colleagues or peers and are conscious of how their own actions affect others. They recognize the value of working together and know when to draw from the resources of others. Costa and Garmston (1994) acknowledge that within a person exists two forms of intelligence.

One is the intelligence that we have in our own heads, our experience. But the way that intelligence gets shaped is through reciprocity with others. Being devil's advocate, having to justify, having to resolve differences, having to listen to another person's point of view, achieving consensus, receiving feedback actually increases our own intelligence. The individual and the organization continue to grow intellectually in reciprocity with others. (p. 141)

For preservice teachers to continue to grow intellectually it is essential that educational environments are created that foster interdependence and allows opportunities to collectively plan and interact with peers and/or mentor teachers.

Teacher educators want preservice teachers to be successful life-long learners and to take advantage of opportunities to learn from their experiences. Life-long learners reflect on their experiences and are self directed. They forge their own paths and continuously reflect to learn from their experiences (Baker, Forte, & Luidens, 2003). The Cognitive Coaching process provides the opportunity for preservice teachers to be more receptive to feedback, take ownership, reflect on their experiences, and provides an environment that cultivates each state of mind.

Power of Reflection

When we think about the relationships between university courses and field placements we must also think of how to provide multiple opportunities for teacher candidates to practice and then reflect on their experiences. Becoming a teacher is challenging and multifaceted. It requires an individual to develop a strong understanding of content, pedagogy, and to be able to put theory into practice; however, it also requires an understanding of how to reflect. Reflecting on practice that is structured and well supported is an essential part of the process in becoming a teacher (Ghaye, 2011). There are many views on what it means to reflect. Dewey (1933) suggests that reflection is a way of being as a teacher. Boud et al. (1985) believed that reflection may take place in isolation or in association with others where individuals engage to explore their experiences in order to lead to new understandings and appreciations. Calderhead and Gates (1993) define reflection similar to Dewey, as a crucial element in the professional growth of teachers. Reflection is looking back and making sense of practice, learning from this, and using this learning to affect future actions. It is about making sense of professional life and understanding that there is always room to improve (Ghaye, 2011). Continuous improvement is not a destination; it is a journey that really has no finish line and realizing that there is always a need to get better (Nash, 2011). Most successful teachers are those who are never satisfied; they are constantly trying to improve and reflecting on their practice (Nash, 2011).

Dewey has helped shape our idea of the reflective teacher; however there are others who help us define what reflective practice should look like (Costa & Garmston, 1994; Schon, 1983, 1987; Zeichner & Liston, 1996). Schon (1983) deems that reflection

can be seen in two ways. In teaching, reflection-on-action can “occur before a lesson when we plan for and think about our lesson” as well as, “after instruction when we consider what occurred” (Zeichner & Liston, 1996, p. 14). On the other hand, when we are teaching and we encounter “an unexpected student reaction or perception” we may try to “adjust our instruction to take into account these reactions” (Zeichner & Liston, 1996, p. 14). This is what Schon (1983, 1987) refers to as reflection-in action.

To enhance growth and development it is important for teachers and even more important for teacher candidates to reflect on their experiences (Hume, 2009). When preservice teachers reflect, they are linking theory to practice and taking an active role in their professional accountability (Bain, Ballantyne, Packer, & Mills, 1999; Calderhead, 1988). Thinking about their experiences will enhance professional learning and growth, and lead to the improvement in teaching in the classroom (Hume, 2009; Loughran & Corrigan, 1995; Moon, 1999; Wallace & Loudon, 2000). Reflecting on practice has become a common task for teacher candidates, however little is known about the best processes and principles to apply when reflecting (Bain et al., 2002). For reflections to be of value, it is imperative that this practice becomes more than just a record of events but a process that can be used as a tool for learning. Teacher educators must create opportunities for teacher candidates to learn how to reflect meaningfully (Bain et al., 2002; Freese, 1999; & Korthagen & Wubbles, 1995) and investigate different ways to enhance the reflective journaling of teacher candidates (Bain et al., 1999). Cognitive Coaching enables everyone to work together, fosters open and honest communication, and encourages reflecting on practice (Costa & Garmston, 1994).

Reflective Journaling and Cognitive Coaching

Vygotsky (1986) compared writing to “having a conversation on paper” (p. 181). Since there is no audience present while a person is in the act of writing, it is hard to provide immediate feedback. The written language can be so powerful and we find that “preparing teachers to teach thoughtfully and to consider the consequences of their work carefully, involves creating opportunities for beginning teachers to learn the skills and attitudes for reflective practice” (Bain et al., 2002, p. 10). A common method used for this purpose is the written account of a person’s professional practice, known as reflective journaling (Bain et al., 2002). Reflection is not a skill that is automatically possessed from within. According to Bain et al. (2002), research has shown that if journal entries are not supported, they will more likely turn into descriptive accounts of an incident, rather than a careful analysis. Reflection can be taught and despite the challenges, with much practice it can be developed and used as a valuable tool for learning (Bain et al., 2002).

There are a limited number of studies that investigate the impact of coaching in the educational setting. There are even fewer studies that have focused on the impact of Cognitive Coaching specifically. Costa and Garmston (1994) encouraged teachers to reflect orally; however, they fail to make any connection to the importance of reflective journaling. Combining the Cognitive Coaching process and the use of reflective journaling can enable teacher educators to better support how teacher candidates make meaning of their classroom experiences. This allowed teacher candidates to document the facilitation of their own learning and aided in the development of the five states of mind.

Conclusion

Like all other professions we know that teacher education has changed and will continue to change over time. Coaching and Cognitive Coaching have become important concepts in teacher education and the professional development of teachers (Showers & Joyce, 1996, Knight, 2009). While still relatively new and seen as one of the most promising approaches in professional learning, research is solid in its support of coaching (Barkley, 2005; Knight, 2009). Cognitive Coaching improves teaching (Barkley, 2005; Costa & Garmston, 1994; Ellison & Hayes, 2009), student learning (Barkley, 2005), and provides opportunities for teachers to consciously practice their profession while reflecting on their practice (Bain et al., 2002; Barkley, 2005; Ellison & Hayes, 2009). The days are long gone where a teacher teaches alone. School systems are seeking new ways to provide additional support for their teachers. Teachers will continue to need additional support from colleagues and coaches to continue their growth as a professional (Barkley, 2005).

Teachers move through stages of conceptual, cognitive, and ego development (Kagan, 1992). These developmental levels have a direct relationship to student performance and student behavior. Witherall and Erickson (1978) found there were many benefits to teachers who were at the highest levels of ego development and intellectual functioning. These benefits included: greater complexity and commitment to students, greater generation and use of data in teaching, demonstration of more flexibility, tolerance for stress, and adaptability. Teacher candidates will also go through many developmental levels throughout their journey of becoming a teacher and no amount of experiences alone will increase their mental capacity (Costa & Garmston,

1994). However, these capacities will only be developed if teacher candidates have the opportunity to reflect upon their experiences. Costa and Garmston (1994) found that “autonomous teachers consciously reflect upon, conceptualize, and apply understandings . . . as experiences with teaching and learning accumulate concepts are derived and constructed” (p. 100) and teachers become more refined. By connecting reflective journaling and Cognitive Coaching, teacher candidates will become more “conscious, efficacious, precise, flexible, informed, and skillful decision makers” (Costa & Garmston, 1994, p. 101). In the next chapter the researcher describes the methods that went into the design of this study.

CHAPTER THREE

Research Methodology

The purpose of this chapter was to describe the methodology used in the design of the study. The description includes the research perspective and type of research, the research questions to be answered, the context and participants of the study, and the methods used to gather and analyze the data.

Research Perspective

According to Creswell (2007), qualitative research is conducted because a problem or issue needs to be explored. On the other hand, quantitative research is conducted to better “understand the relationship among variables or determine if one group performs better on an outcome than another group” (Creswell & Plano Clark, 2011, p. 7). The intent of this study is to examine the impact that Cognitive Coaching had on the reflective journaling of a preselected group of teacher candidates. The researcher used archived data to compare reflective journal responses that were collected from two groups of teacher candidates; one group was exposed to Cognitive Coaching and another group that was not. This study was suited for qualitative design because the researcher focused on people’s personal stories and analysis of written text. There is a phenomenological influence because the researcher focused on the essence of lived experiences (Merriam, 2009). At the same time, this study was suited for quantitative design because the researcher determined the impact of exposure or lack of exposure Cognitive Coaching had on the reflective journaling of teacher candidates. Since both

types of research provide different perspectives and have their own limitations, it was imperative that the researcher conduct a mixed method case study with the hope that “the limitations of one method can be offset by the strengths of the other method, and the combination of quantitative data and qualitative data provide a more complete understanding of the research problem than either approach by itself” (Creswell & Clark, 2011, p. 8). Therefore a mixed method case study was the design best suited for this study.

Research Questions

Many research studies have investigated the mentoring and support available to teachers (Gordon & Brobeck, 2010; Onchwari & Keengwe, 2008; Simpson, Hastings, & Hill, 2007). Limited studies were found by the researcher, which investigated the impact of Cognitive Coaching to help teachers develop professionally (Foster, 1989; Garmston et al., 1993; Robinson, 2011). Even fewer studies were found that linked the coaching process to the success of teacher candidates (Getler, 1993). Therefore, the researcher was led to believe that a need for studies that investigated the impact of Cognitive Coaching on teacher candidates existed.

The purpose of this study was to determine the impact that Cognitive Coaching had on the archived reflective journaling of teacher candidates. This study looked at archived data consisting of reflective journaling of preservice teacher candidates who were exposed to the Cognitive Coaching model and compared it to other archived reflective writing samples of teachers candidates not exposed to Cognitive Coaching. When examining the archived data, the researcher identified key categories that emerged and were consistent with Costa and Garmston’s (1994) five states of mind: efficacy,

flexibility, consciousness, craftsmanship, and interdependence. Once the categories were identified, the researcher used the Reflective Writing Responses Rubric (Appendix A) to determine the degree to which each state of mind was present in each archived Reflective journal. The rubric had four different levels that could be observed when reading the reflective journals. Each reflective journal was assigned a score ranging from zero to five in each category of the states of mind. The following questions guided the research:

How did Cognitive Coaching impact the reflective journaling of teacher candidates?

- 1) Did teacher candidates exposed to Cognitive Coaching show more confidence or a greater sense of efficacy in their reflective journals?
- 2) Did teacher candidates exposed to Cognitive Coaching show more flexibility in their reflective journals?
- 3) Did teacher candidates exposed to Cognitive Coaching show more consciousness of the act of teaching in their reflective journals?
- 4) Did teacher candidates exposed to Cognitive Coaching show more craftsmanship in their reflective journals?
- 5) Did teacher candidates exposed to Cognitive Coaching display more interdependence in their reflective journals?

To answer these questions, reflective journals of the teacher candidates who had been exposed to Cognitive Coaching were compared to reflective journals of teacher candidates who had not been exposed to Cognitive Coaching.

Purposeful criterion-based sampling was used to determine which archived reflective journals would be used in the study. Creswell and Plano Clark (2011)

recommended this type of sampling when the researcher wants to examine specific data-sets comparing and contrasting phenomena experienced and reported (e.g., archived data consisting of reflective writing samples from preservice teacher candidates).

Research Design

Choosing a study design

requires understanding the philosophical foundations underlying the type of research, taking stock of whether there is a good match between the type of research . . . and becoming informed as to the design choices available to you within the paradigm. (Merriam, 1998, p. 1)

According to Baxter and Jack (2008) and based on the research findings of Yin (2009), a case study design is considered when the focus on the study is to answer the *how* and *why* questions. Case study research is a form of interpretive research (Merriam, 1998) and can be considered inductive in nature because cases are studied to gain understanding. Mixed methods research involves collecting both qualitative and quantitative data to provide a detailed and general understanding of the problem (Creswell & Plano Clark, 2011). In this mixed methods case study the researcher applied both qualitative and quantitative research techniques and strategies to analyze the archived reflective journals of teacher candidates. This study was an embedded design in nature because the researcher utilized quantitative methods to enhance the qualitative findings (Creswell & Plano Clark, 2011). Prior to analyzing and examining the results of the archived reflective journals, the researcher identified major categories that were consistent with Costa and Garmston's (1994) States of Mind. According to Costa and Garmston (1994), "the five states of mind serve as diagnostic tools, constructs through which we can assess the cognitive development of other individuals and groups and plan interventions"

(p. 132). Individuals, who are constantly experiencing and experimenting, will fail frequently, but in return will learn from the situation and achieve a sense of autonomy (Costa & Garmston, 1994). These autonomous individuals will set goals that are self directing, self monitoring, and self modifying (Costa & Garmston, 1994).

At the heart of Cognitive Coaching is the concept that each of us has resources that enable us to grow and change from within (Ellison & Hayes, 2003). Costa and Garmston (1994) refer to these resources as the states of mind. The coach must mediate these five characteristics of the states of mind to allow people to use their inner resources more effectively.

Data Collection

This mixed methods case study did not include human subjects as part of the data sample. Instead, archived data represented the cases under analysis. The archived data were reflective journals collected from teacher candidates as part of a required reflection assignment for a junior level course in spring of 2010 and a junior level course in spring 2011. Each of the teacher candidates in spring of 2010 wrote a weekly reflective journal for each week of a 13-15 week field experience that took place on an elementary campus in an urban school district in Central Texas. None of the teacher candidates were exposed to Cognitive Coaching. Each of the teacher candidates in spring of 2011 wrote a reflective journal for a 13-15 week field experience that took place on an elementary campus in an urban school district in Central Texas. Each of these teacher candidates were exposed to Cognitive Coaching. All of this data was archived.

All participants were part of a junior level practicum which was required for all students majoring in education. The practicum six-hour block included a three semester-

hour seminar and classroom teaching experience. Junior level practicum students were assigned to a classroom in a professional development school. The classroom teacher served as the Clinical Instructor. The junior level teacher candidates were responsible for teaching a small group ranging from four to six students, four days a week, for a 50 minute period, in Math or Literacy for 13-15 weeks each semester. Each teacher candidate was a second semester junior level teacher candidates in the spring of 2010 or 2011. Each teacher candidate was intentionally exposed or not exposed to Cognitive Coaching, and each completed a weekly reflective writing assignment following the guidelines that were provided by the instructor (Appendix B).

Each junior level teacher candidate was provided a weekly reflection prompt. For each reflective prompt the teacher candidates were asked to choose an experience that occurred while teaching a small group lesson. The teacher candidates were asked to think of the moment as a snapshot. This experience may have been pleasant or uncomfortable, rewarding or frustrating, and a revelation or a puzzle. Teacher candidates were asked to describe the experience with as much detail as possible and include as much verbatim interaction as they could remember. Then they were expected to write an explanation or interpretation of this experience. Appendix B provides the exact wording of the reflective prompt. Merriam (2009) identified these writing samples as personal documents. Personal documents “refer to any first-person narrative that describes an individual’s actions, experience, and beliefs” (Bogdan & Biklen, 2007, p. 133).

The first set of 138 reflective journals were collected in spring semester of 2010 from teacher candidates who were not exposed to Cognitive Coaching. The second set of 116 reflective journals were collected in the spring semester of 2011 from teacher

candidates exposed to the Cognitive Coaching. After the archived data was obtained, it was stored in multiple places for precautionary reasons. Original drafts were stored electronically and were anonymous. Copies of the drafts were printed and sorted into two distinct cases, and separated by weeks that corresponded with each week of the junior level field experiences. The spring 2010 reflective journals and spring 2011 were placed in separate three ring binders. All archived reflective journals remained anonymous and were only recognizable by date. Case one consisted of 138 archival reflective journals and case two consisted of 116 archival reflective journals that were stored in a binder that were locked in a secure file cabinet. Another copy of each reflective writing sample was stored electronically on a USB flash drive then locked in a desk drawer at the researchers' home office, as well as stored in a folder within the researcher's email account. Researchers highly recommend developing backup copies of computer files (Creswell, 2007; Davidson, 1996).

Institutional Review Board approval was obtained in November of 2011, one week after submission; it was expedited and ruled exempt because the researcher was using archived data. In December 2011, after IRB permission was granted, the researcher took out each notebook. From the 2011 stored reflective journals the researcher randomly selected every fifth journal, beginning after the fourth week, to ensure that full implementation of Cognitive Coaching had occurred. The researcher stopped selecting once 18 samples were selected. From the 2010 stored reflective journals the researcher selected every fifth journal, beginning after the fourth week until 18 reflective journals were selected. For consistency, the researcher kept the same guidelines for both groups and a total of 18 samples were selected from each group.

To control for bias the researcher had a colleague combine and number the data set. The colleague was in the doctoral program, with an emphasis in Science, at a Central Texas university. Each reflective journal was numbered and placed into two groups. The numbering system did not indicate which reflective journal was written by a teacher candidate exposed to Cognitive Coaching and which was not.

Data Analysis

Managing and organizing the data was of the utmost importance to the success of the study. A mixed methods study requires the researcher to “have skills in several areas: quantitative research, qualitative research, and mixed methods” (Creswell & Plano Clark, 2011, p. 17). Both qualitative and quantitative methods may be relevant to the study and no matter what analytic strategy or techniques have been chosen it is important for the researcher to do everything to make sure the analysis is of the highest quality (Yin, 2009). Often times, data collection and analysis can happen simultaneously (Merriam, 1998). In this study, the researcher used both qualitative and quantitative data analysis techniques to understand the impact that Cognitive Coaching had or did not have on the reflective journaling of preservice teacher candidates.

In this study the researcher used an embedded mixed methods case study design. According to Creswell and Plano Clark (2011) “an embedded design occurs when the researcher collects and analyzes both quantitative and qualitative data within a traditional quantitative or qualitative design” (p. 71). This can occur when the researcher may need to add a quantitative strand to a qualitative study to enhance the design in some way (Creswell & Plano Clark, 2011). The overarching question, “How did Cognitive

Coaching impact the reflective journaling of preservice teacher candidates?" is the qualitative piece and the sub-questions are the embedded quantitative piece.

Data analysis consisted of a series of stages. First, the researcher sorted through the archived reflective journals that were identified through the data collection process. To ensure that the data analysis process was reliable the researcher had another person randomly number each archived reflective journal. Both cases were mixed together and each sample was assigned a number, this ensured to control for bias. Therefore, the researcher had no knowledge of which sample was exposed or not exposed to Cognitive Coaching. This study included both qualitative and quantitative data.

Qualitative Data Analysis

In the qualitative phase the researcher examined the reflective journals and performed a content analysis to determine the presence of certain words or concepts within the text. The researcher specifically focused on the language of the narrative and key words and phrases were identified that supported the predetermined categories from within the text. The researcher analyzed each archived reflective journal using the predetermined categories of the five states of mind: efficacy, flexibility, consciousness, craftsmanship, and interdependence, as described by Costa and Garmston (1994). Each reflective journal was read one time through without any interruptions. The researcher then read through each reflective journal multiple times, color coded the language, and looked for patterns that aligned with the five states of mind. Key words and phrases were color coded and were grouped into pre-existing categories. Efficacy was coded in green, flexibility was coded in brown, consciousness was coded in purple, craftsmanship was coded in orange, and interdependence was coded in yellow. It was imperative for the

researcher to be aware that there may be language used in the reflective journals that was synonymous with the five identified categories. Merriam (2009) discussed the importance of interpretive understanding or meaning, while paying special attention to context and purpose. This type of analysis uses qualitative methods to establish context and meaning for what people do (Patton, 2002). After the language was coded, the researcher recorded different key words and phrases that represented each state of mind on a chart. The researcher used two separate charts one to record key words and phrases of the reflective journals from the teacher candidates that were exposed to Cognitive Coaching (Appendix C), and another chart to record key words and phrases of the teacher candidates who were not exposed (Appendix D). For clarity and accuracy the researcher made sure to read through each reflective journal an additional time after all coding and recording was complete.

Quantitative Data Analysis

The quantitative phase utilized the Reflective Writing Response Rubric (Appendix A) to determine the degree to which state of mind that was present in each reflective journal. When examining the archived data, the researcher identified key categories that emerged and were consistent with Costa and Garmston's (1994) five states of mind: efficacy, flexibility, consciousness, craftsmanship, and interdependence. Once the categories were identified, the researcher used the Reflective Writing Response Rubric to determine the degree to which each state of mind was present in each archived reflective journal. The rubric had four different levels that could be observed. After each archived writing sample was read, it was given a score ranging from zero to five in each category of the five states of mind. If a state mind on the rubric was given a zero, which

meant that the researcher found no reference made in the reflective journal. If the researcher provided a score of one or two then the researcher concluded that low levels of that state of mind existed. If the score of a three was given then the researcher concluded that a moderate level of that state of mind was noticed. If the score provided by the researchers was a four or five, then a high level of that state of mind was present.

The researcher conducted a content analysis of the reflective journals that were selected from the archived data. This process involved examining the language in the narratives and as the content was being analyzed a scale was used to determine the preservice teachers' reflective writing responses. The researcher simultaneously analyzed the content using the Reflective Writing Response Rubric. Five predetermined categories were identified and defined focusing on each state of mind. The researcher was cognizant of new emerging categories. After the key words and phrases were coded the researcher quantified the representation of the five predetermined categories identified in the Reflective Writing Response rubric. A rubric was then applied to quantify the impact of Cognitive Coaching in each reflective journal. After the data was analyzed a cross case comparison was used to look at similarities and difference that emerged. After the data analysis was completed, the researcher asked a peer, who was familiar with the research design, to review the database and results for reliability.

Validity

All good research requires the researcher to utilize procedures “to ensure the validity of the data” (Creswell & Plano Clark, 2011, p. 210). Yin (2009) recommends four commonly used tests to establish the quality of case study research: construct validity, internal validity, external validity, and reliability. Critics of case study research

often suggest that subjective judgments are used to collect the data (Yin, 2009). In order for the researcher to meet the test of content validity the researcher defined Cognitive Coaching in terms of the five states of mind and identified operational measures that matched (Yin, 2009). The researcher used multiple sources of archived writing samples and internal validity was addressed through pattern matching. If patterns occur, the results will help a case study strengthen its internal validity (Creswell & Plano Clark, 2011; Yin, 2009). Validity can differ in both qualitative and quantitative research; however both approaches serve the purpose of checking on the quality of data, results, and interpretation (Creswell & Plano Clark, 2011).

In qualitative research there are multiple ways to validate a study. When checking for qualitative validity it is important that the researcher check to make sure the information that is collected is valid (Creswell & Plano Clark, 2011). In quantitative research it is important for the researcher to be concerned about “issues of validity at two levels: the quality of the scores from the instrument used and the quality of the conclusions that can be drawn from the results of the quantitative analyses” (Creswell & Plano Clark, 2011, p. 210). A variety of techniques were used to address the study’s validity. These techniques included: interrater reliability or peer review, pattern matching, and coding.

Assumptions of the researcher should be clarified (Merriam, 1998). The results of various studies regarding the impact of Cognitive Coaching may influence the researcher’s attitudes and beliefs. The researcher may want to believe that the results will indicate that Cognitive Coaching positively impacted teacher candidates’ reflective journaling. To control for bias, the reflective journals were coded by another person. To

keep the researcher honest, after the data were analyzed a peer reviewed a sample set of the data collected. Peer review, sometimes referred to as interrater reliability, provided an external check of the research process (Creswell, 2007). In this study the researcher used a peer review to validate the data collected. The researcher provided this individual with five archived reflective journal responses that were randomly selected. The peer reviewer rated a sample set of five reflective journal responses using the Reflective Writing Response Rubric. When the peer review was completed, results were then compared in a peer debriefing session. Each rubric consisted of five categories that were scored based on the states of mind. Out of the five responses, 20 of 25 (80%) categories were scored identically. However, 5 of 20 (20%) were scored differently and were then changed by the researcher. The peer reviewer and researcher agreed that since 80% of the scores matched, that it would only be necessary for the researcher to read through each reflective journal to double check all scores. No significant changes were made to alter the data results.

Conclusion

In this mixed methods embedded case study design, the researcher conducted a qualitative study and embedded quantitative methods as an enhancement. The focus of the design was on transferability rather than generalizability. The investigator hoped that the interpretation of this data within this investigation would warrant teacher educators to focus on the importance of Cognitive Coaching not only in the field of education, but most importantly in the development of preservice teachers. The following chapter includes the outcomes of the study as indicated by the data collection and data analysis process.

CHAPTER FOUR

Findings

Within this chapter, the analysis is reported using both qualitative and quantitative methods to answer the research questions. The primary purpose of this mixed methods case study was to determine the impact that Cognitive Coaching had on the reflective journaling of preservice teacher development and to examine the categories that emerged. The pre-existing categories originated from Costa and Garmston's (1994) five states of mind which are: efficacy, flexibility, craftsmanship, consciousness, and interdependence. Specifically, this research study had the goal of answering the following research questions:

How did Cognitive Coaching impact the reflective journaling of teacher candidates? To address this overarching question, the following sub-questions were formulated.

- 1) Did candidates exposed to Cognitive Coaching show more confidence or a greater sense of efficacy in their reflective journals?
- 2) Did candidates exposed to Cognitive Coaching show more flexibility in their reflective journals?
- 3) Did candidates exposed to Cognitive Coaching show more consciousness of the act of teaching in their reflective journals?
- 4) Did candidates exposed to Cognitive Coaching show more craftsmanship in their reflective journals?

- 5) Did candidates exposed to Cognitive Coaching display more interdependence in their reflective writing?

Method for Analysis

To answer the overarching question, the initial analysis was conducted by first collecting all of the archived reflective journals and sorting through every fifth one to determine the sample size. The researcher then compared two different sets of archived data consisting of reflective journals from two predetermined groups of teacher candidates. The first set consisted of 18 reflective responses from teacher candidates that were exposed to Cognitive Coaching. The other set of 18 reflective journals were not exposed. To determine the degree to which state of mind was present the researcher used two phases. The quantitative phase utilized the Reflective Writing Response Rubric. The qualitative phase utilized open coding, using the predetermined five states of mind categories, to code the key words or phrases found in the data.

After each reflective journal was analyzed by the researcher, reflective journals revealed the following results.

Research Sub-question 1

Did teacher candidates exposed to Cognitive Coaching show more confidence or a greater sense of efficacy in their reflective journals?

To answer the question the researcher looked at the written responses that were coded from within the text and looked at how each reflective journal scored in the area of efficacy on Reflective Writing Response Rubric. Specifically, the researcher looked for whether or not teacher candidates learned from their experience and was able to shape

themselves accordingly. Were they able to identify what they knew, did not know, or needed to know? After identifying this information were they able to utilize resources to make an impact and did he or she believe that they could make a difference? Did he or she successfully execute the behaviors required to influence outcomes and secure belief in their own coping abilities (Costa & Garmston, 1994)? The results can be seen below in Figure 1.

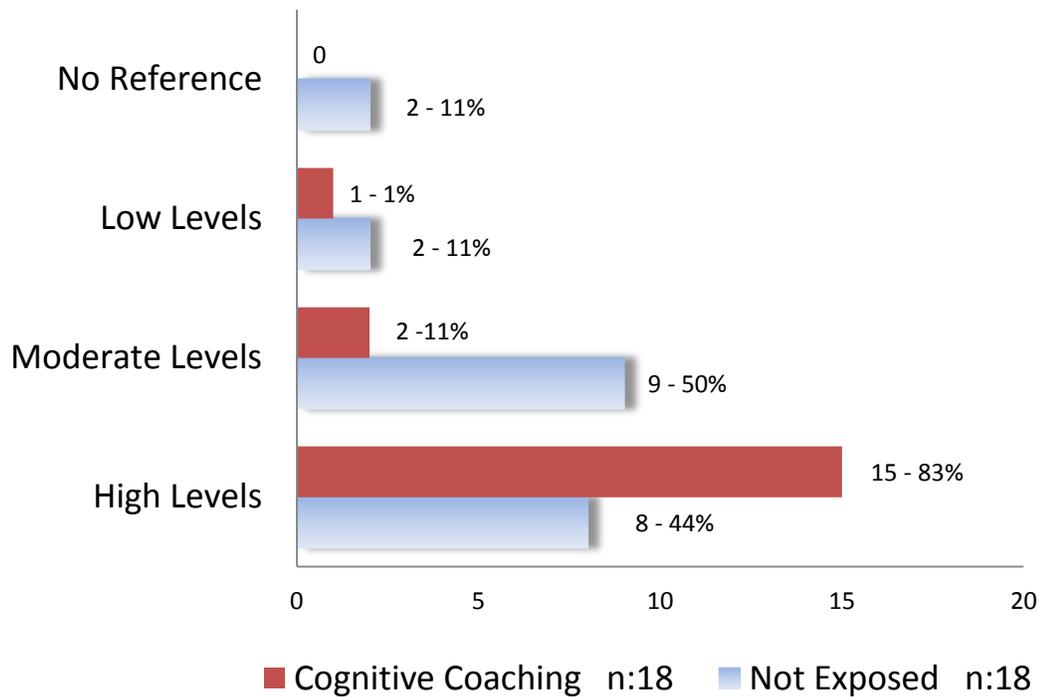


Figure 1. Comparisons of teacher candidate efficacy levels

Reflective journals revealed that teacher candidates exposed to Cognitive Coaching showed higher levels of efficacy than those who were not. As seen in Figure 1, of the 18 teacher candidates exposed to Cognitive Coaching 15 of 18 (83%) exhibited high levels of efficacy, two of 18 (11%) had moderate levels of efficacy, and one of 18 (1%) had a low level of efficacy. It is important to note that out of the 18 teacher

candidates exposed to Cognitive Coaching there was no one who scored a zero. All reflective journals were efficacious in nature to some degree. Looking at the teacher candidates who were not exposed to Cognitive Coaching the reflective notes revealed that 8 of 18 (44%) teacher candidates exhibited high levels, 9 of 18 (50%) had moderate levels, 2 of 18 (11%) had low levels and 2 of 18 (11%) had no reference to efficacy.

When analyzing the written text, one phrase was used consistently by both groups. The phrase “I learned” appeared seven times in the reflective journals of teacher candidates who had no exposure and was used 10 times by those who had exposure to Cognitive Coaching. The “I learned” statements that were written can be seen in Table 2.

Although, high levels of efficacy existed in both data sets of reflective journals the researcher noticed that a total of 37 key words or phrases were coded in the groups exposed to Cognitive Coaching where as the group that was not exposed had a total of 23 key words or phrases. (Additional data can be seen in Appendix E.)

Table 2

“I Learned” Statements Indicating Efficacy

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I learned a great deal about two of my students.	Not only did I learn . . .
I learned a great deal about ____ and ____ individual needs and how I can meet them.	I have learned that it is important . . .
I have learned from my experience that . . .	I learned that you can . . .

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I have learned that . . . , I need to constantly question and encourage _____ during my lessons to keep him engaged.	I have really learned firsthand how much . . .
I learned this week . . .	I have learned from this past week . . .
I learned that I definitely want to learn from other teachers.	I have learned how to pick out when to stop a child's story and this will help me move on with my lesson . . .
I learned that as a teacher, you have to be prepared to teach all different levels.	I learned that practice really does help students a lot.
I learned that providing visuals or hands-on activities are a great ways to motivate students to participate . . .	
I learned that it is important to . . .	
I learned that you need to . . . which helps control the students.	

Note: All phrases were direct quotes taken from reflective journals.

The researcher also concluded from the data that the group exposed to Cognitive Coaching used a variety of words and phrases that differed from the group with no exposure. The results can be seen in Table 3.

Table 3
Comparisons of Words and Phrases Related to Efficacy

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Word Indicating Efficacy	
Respond	Fail
Successful	Worry

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Effective	Difficult
Modeling	Learn
Engaging	
Example	
Phrases Indicating Efficacy	
I will have to . . .	I don't . . .
Meeting the needs . . .	I think I can . . .
Interaction inspired . . .	I think that is important to . . .
Provided opportunities . . .	I was pretty nervous . . .
I planned . . .	I was surprised . . .
Definitely I want to learn . . .	I began to worry . . .
Much more than . . .	I am not sure . . .
Students understood fully . . .	Great experience . . .
I like how I . . .	I think I should . . .
It was helpful . . .	I am going to . . .
Worked out well . . .	

Note: All words and phrases were direct quotes taken from reflective journals.

Research Sub-question 2

Did teacher candidates exposed to Cognitive Coaching show more flexibility in their reflective journals?

To answer the question the researcher looked at the reflective journals that were coded from within the text and looked at how each reflective journal scored in the area of flexibility on the Reflective Writing Response Rubric. Specifically, the researcher

looked for whether or not the teacher candidates was able to quickly shift perspectives, understand why, and use a wide repertoire of thinking and process skills in moving forward. Did they have the ability to step beyond themselves and look at a situation from a different perspective? The results can be seen in Figure 2.

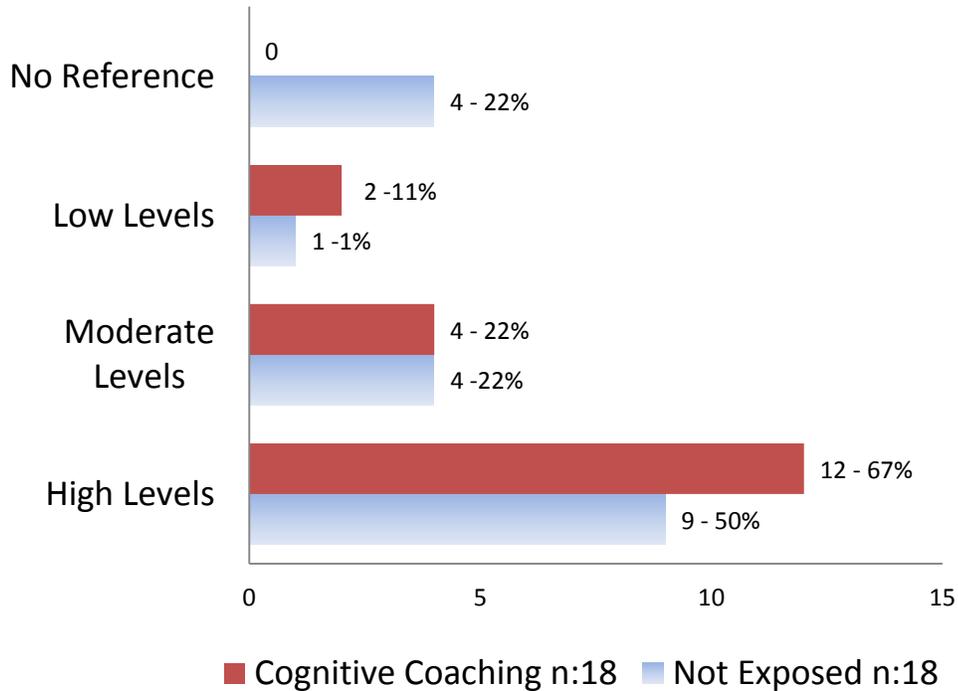


Figure 2. Comparisons of teacher candidate flexibility levels

Reflective journals revealed that teacher candidates exposed to Cognitive Coaching showed higher levels of flexibility as seen in Figure 2. Of the 18 preservice teachers exposed to Cognitive Coaching, 12 of 18 (67%) exhibited high levels of flexibility, 4 of 18 (22%) had moderate levels of flexibility, and 2 of 18 (11%) had low levels of flexibility. It is important to note that out of the 18 teacher candidates exposed to Cognitive Coaching all reflective journals examined displayed one of three levels of flexibility. Of the teacher candidates who were not exposed to Cognitive Coaching 9 of

18 (50%) exhibited high levels of flexibility, 2 of 18 (22%) had moderate levels, 1 of 18 (1%) had low levels, and 4 of 18 (22%) had no reference to flexibility in their reflective journals.

Although high levels of flexibility existed in both data sets of reflective journals the researcher noticed that a total of 33 key words or phrases were coded in the groups exposed to Cognitive Coaching, where as the group that was not exposed had a total of 20 key words or phrases. (Additional data can be seen in Appendix F.)

After further examination of the data the researcher concluded that the group exposed to Cognitive Coaching used a variety of words and phrases that were both similar and different from the group with no exposure. The results can be seen in Table 4. Similar words used in both data sets were words such as differentiate or differentiation, different, and plan or planned. However, the biggest difference noted was that four out of the 18 teacher candidates with no exposure to Cognitive Coaching made no reference to flexibility in their reflective journals as compared to all of those exposed to Cognitive Coaching made some level of reference to flexibility.

Table 4

Comparisons of Words and Phrases for Flexibility

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Words Indicating Flexibility	
Differentiate (5 times)	Change
Flexible (2 times)	Differentiation
Change (2 times)	Plan

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Start over	Decided (3 times)
Prepared	Different
Shift or Altered	Make exceptions
Different (4 times)	
Transition	
Reconsider	
Assist	
Planned	

Phrases Indicating Flexibility

I went ahead and said, Okay that's fine	I have to be flexible
Able to understand	I decide instead of rushing through the next day to catch up, I will just push back everything
Try something new or different	Had to switch gears
It is so important to be able to think on your feet as a teacher and shift strategies immediately if your students are not understanding or becoming frustrated	Change in plans (2 times)
Make it work	I decide that we work together
If you change your strategy and have a plan for differentiation, then your students are going to be able to recover.	Needed a second chance
Keeping models I have in my classroom diverse	Had to step in to assist
I tried many different methods	I focused on helping . . . go back and reteach something

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
. . . many roles as a teacher	I am not sure the best way to handle this . . .
I tried something a bit different with my kids	I need to go back and cover a topic again before moving on
Working in two different stations worked out so well for my kids	Need to take a step backwards
Process was successful	Practicing each day my students were able to . . .
My students will not always need what is on that piece of paper, so I need to be flexible and instruct them as their assessment leads.	I am going to need to be flexible

Note: All words and phrases were direct quotes taken from reflective journals.

Research Sub-question 3

Did teacher candidates exposed to Cognitive Coaching show more consciousness of the act of teaching in their reflective journals?

To answer the question the researcher looked at the written responses that were coded from within the text and how each writing sample scored in the area of consciousness on the Reflective Writing Response Rubric. Specifically, the researcher looked for whether or not the teacher candidates had the ability to monitor themselves. Did he or she have awareness of assumptions, knowledge, and certain events that occurred? Was the preservice teacher aware of criteria for decision making and able to respond to a variety of cues while keeping their students on track (Costa & Garmston, 1994)? Lastly, could they reflect to help determine the course taken to change certain future events (Hayes & Ellison, 2003)? Ellison and Hayes (2009) deem that highly

conscious individuals “listen to their own listening” and are conscious of “reflection before, during, and after the experience” (p. 76).

Reflective journals revealed that teacher candidates exposed to Cognitive Coaching showed higher levels of consciousness than those who were not exposed.

The results can be seen below in Figure 3.

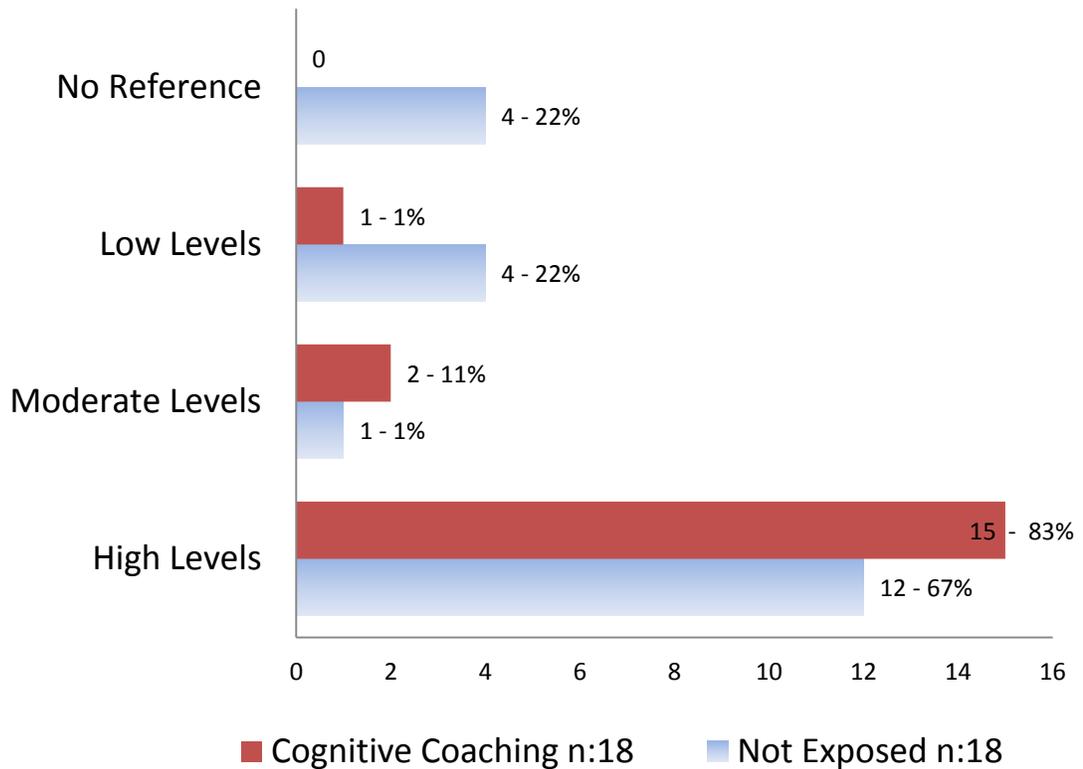


Figure 3. Comparisons of teacher candidates consciousness levels

As seen in Figure 3, of the 18 teacher candidates exposed to Cognitive Coaching 15 of 18 (83%) exhibited high levels of consciousness, 2 of 18 (11%) had moderate levels of consciousness, and 1 of 18 (1%) had a low level of consciousness. It is important to note that the results were identical to the group of 18 teacher candidates exposed to Cognitive Coaching. Since none of the group scored a zero, all teacher candidates were

conscious to some degree. Looking at the teacher candidates who were not exposed to Cognitive Coaching the reflective journals revealed that 12 of 18 (67%) teacher candidates exhibited high levels, 1 of 18 (1%) had moderate levels, 4 of 18 (22%) had low levels, and 4 of 18 (22%) had no reference to consciousness.

When analyzing the written text, one phrase was used consistently by both groups. The phrase “I realized” appeared three times in the reflective journals of teacher candidates with no exposure and was used 11 times by those with exposure to Cognitive Coaching. The “I realized” statements that were written can be seen in Table 5.

Table 5

“I realized” Statements Indicating Consciousness

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I realized that situations similar to this one will definitely happen to me in the classroom as a teacher.	I just realized . . .
I realized how effective my lesson was . . .	Made me realize how important it is to . . .
I realized as a teacher, sometimes you realize that you have made a mistake . . .	It made me realize . . .
I realized that I need to be aware . . .	
This has really made an impact on me and made me realize . . .	
I have just never realized the many roles of a teacher, but I am beginning to see . . .	
. . .realized how much hard work it takes to keep their attention . . .	
. . .realized how to determine . . .	

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I realized how effective my lesson was . . . (2 times)	
I did realize that . . .	
I realized how important it is to introduce rules on the first day	

Note: All phrases were direct quotes taken from reflective journals.

The researcher determined that the group exposed to Cognitive Coaching used a variety of words and phrases that were similar and different from the group that had no exposure. Similar words used in both data sets were words such as realized or realize, and helped. However, the biggest difference noted was that 4 of the 18 teacher candidates with no exposure to Cognitive Coaching made no reference to consciousness in their reflective journals as compared to all of those exposed to Cognitive Coaching made some level of reference. The results can be seen in Table 6.

Table 6
Comparisons of Words and Phrases for Consciousness

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Words Indicating Consciousness	
Realized	Realize
Eye-opening	Impact
Reflect	Understand
Reviewed	Surprised
Transition	Helped

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Refer	
Felt	
Helped	
Phrases Indicating Consciousness	
In the future . . . (5 times)	I don't . . .
I realized . . . (11 times)	I am assuming that it is all connected
Important to . . . (2 times)	This could explain why . . .
I felt . . .	I could encourage . . .
I will . . .	Helped me to grow . . .
I reflect . . . (4 times)	More ideas and ways to push my students
Eye-opening . . . (5 times)	I will have to pay attention
Taken for granted . . .	Take a step backwards . . .
Depending on us . . . (5 times)	I was happily surprised . . .
Your response that is going to make or break you as a teacher.	After this experience I will . . .
I didn't realize . . .	It was clear to me . . .
As I was reflecting (3 times)	
This helped minimize distraction . . .	
This has really made an impact on me	
The increased levels of communication . . .	
.	
The process was a bit overwhelming . . .	
Made me want to . . .	

Note: All words and phrases were direct quotes taken from reflective journals.

Although, high levels of consciousness existed in both data sets of reflective journals the researcher noticed that a total of 53 key words or phrases were coded in the group exposed to Cognitive Coaching where as the group that was not exposed had a total of 16 key words or phrases. (Additional data can be seen in Appendix G.)

Research Sub-question 4

Did teacher candidates exposed to Cognitive Coaching show more craftsmanship in their reflective journals?

To answer the question the researcher looked at the reflective journals that were coded from within the text and looked at how each journal scored in the area of craftsmanship on the Reflective Writing Response Rubric. Specifically the researcher looked for whether or not the teacher candidates set high standards for themselves and were data driven. Did he or she take pride in their work and hold a clear vision? Did they acknowledge that their performance should be refined and if so, were they able to discuss how to refine it? In addition, were they able to monitor their own progress? Hayes (2009) believes that individuals with high levels of craftsmanship are aware of their thoughts and feelings and strive for continuous improvement.

Reflective journals revealed that teacher candidates exposed to Cognitive Coaching showed higher levels of craftsmanship than those who were not. The results can be below in Figure 4.

As seen in Figure 4, of the 18 teacher candidates exposed to Cognitive Coaching 15 of 18 (83%) exhibited high levels of craftsmanship, 1 of 18 (1%) had moderate levels of craftsmanship, 1 of 18 (1%) had a low level of craftsmanship, and 1 of 18 (1%) had no reference. For the teacher candidates who were not exposed to Cognitive Coaching the

reflective journals revealed that 9 of 18 (50%) of the teacher candidates exhibited high levels, 3 of 18 (17%) had moderate levels, 3 of 18 (17%) had low levels, and 3 of 18 (17%) had no reference to craftsmanship.

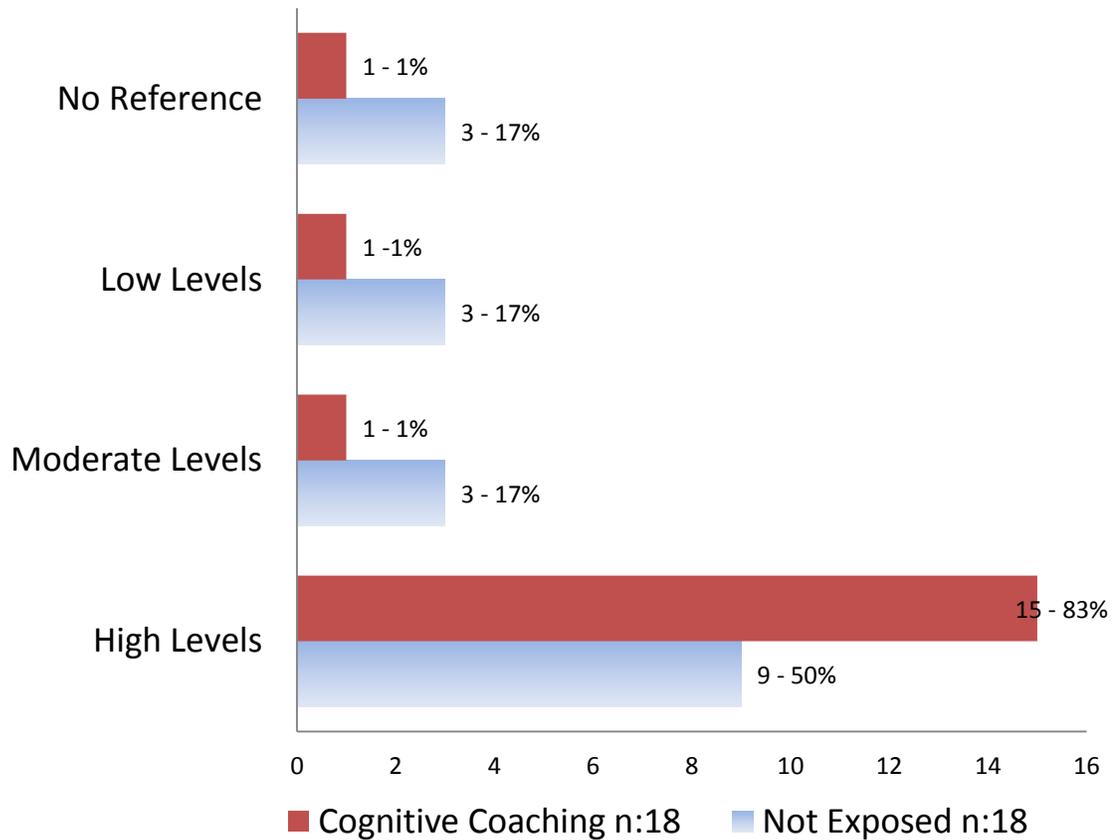


Figure 4. Comparisons of teacher candidates levels of craftsmanship

The researcher found that the group exposed to Cognitive Coaching used a variety of words and phrases that were similar and different from the group with no exposure. The results can be seen in Table 7. Similar words used in both data sets were words such as realized or realize, and helped. However, the biggest difference noted was that 4 of the 18 teacher candidates with no exposure to cognitive coaching made no reference to

craftsmanship in their reflective journals as compared to all of those exposed to Cognitive Coaching who made some level of reference.

Although, high levels of craftsmanship existed in both data sets of reflective journals the researcher noticed that a total of 49 key words or phrases were coded in the groups exposed to Cognitive Coaching where as the group that was not exposed had a total of 31 key words or phrases. (Additional data can be seen in Appendix H.)

Table 7

Comparisons of Words and Phrases of Craftsmanship

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Words Indicating Craftsmanship	
Reflecting	Re-teaching
Impact	Need (4 times)
Continue	Decided
Future (5 times)	Re-direct
High Standards	Important
Respond (2 times)	
Need (5 times)	
Monitored	
Important	
Phrases Indicating Craftsmanship	
I have learned from my experiences . . .	I think I should spend more time evaluating . . .

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I need to learn more about how to meet my student's needs	Great way to motivate . . .
If this happens again, I might respond . . .	Work on as a teacher . . .
In the future I will . . .	I decided . . .
It was a good motivator . . .	I need to be more prepared.
. . . provide what my students need.	It showed me . . .
I will continue to . . .	This connection helped me . . .
I felt as though there was probably a better way to handle it.	I will not revert back to our old . . .
In the moment . . .	I knew I made the tiles very challenging . . . so I pushed them.
Provide what they need . . .	I could see their confidence building as they succeeded.
Being organized, responsible, and available is imperative if a classroom is going to run smoothly.	This was a great way to motivate the students . . .
This lesson showed me how diverse students can be in one classroom and how the teacher needs to cater her lesson to meet every student's needs.	They aren't challenged enough . . .
. . . opened my eyes on how I should help teach them to foster their growth and learning.	. . . more ideas of ways to push my students rather than keeping them at the level they are right now.
It is important to always meet the needs of my students.	. . . redirect him and hold him accountable.
. . . find the best ways to teach your students.	I will have to pay more attention . . .
I can use this experience . . .	I will need to address the problem . . .

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I will definitely carry this thought with me areas I need to work on as a teacher.
Respond in the moment how important it is to . . .
Begin to see . . .	I decide each day . . .
Showed me . . .	I did not plan to . . .
Making an impact . . .	I should be reviewing each lesson.
Reflecting back . . .	I need to be prepared for them.
Incorporate in the future . . .	I pushed them . . .
I can use . . .	
Could have explained . . .	
I want individuals to know that their ideas are valuable.	
I cannot wait to use this activity in my future classroom.	
Because of poor scores, intense remediation needed to be provided.	
I review all of my assessment information and planned accordingly to what they need.	
It was so neat to see instruction driven by assessment . . .	

Note: All words and phrases were direct quotes taken from reflective journals.

Research Sub-question 5

Did teacher candidates exposed to Cognitive Coaching display more interdependence in their reflective journals?

To answer the question the researcher looked at the reflective journals that were coded from within the text and looked at how each journal scored in the area of interdependence on the Reflective Writing Response Rubric. Specifically the researcher looked to see if the teacher candidate acknowledges that he or she does not have to do everything alone. Does he or she have a strong sense of community? Do they value collective work and know when to integrate and when to assert? Interdependent individuals use group resources to enhance personal effectiveness. Ellison and Hayes (2009) believe that these individuals see themselves as part of something larger. “Interdependence draws on our ability to see the nature of our relationships instead of thinking in isolation . . . the recognition that individuals need each other lies at the heart of every system” (Ellison & Hayes, 2009, p. 78).

Reflective notes revealed that teacher candidates exposed to Cognitive Coaching showed higher levels of interdependence than those who were not. The results can be seen below in Figure 5.

As seen in Figure 5, of the 18 teacher candidates exposed to Cognitive Coaching 4 of 18 (22%) exhibited high levels of interdependence, 5 of 18 (28%) had moderate levels of interdependence, 3 of 18 (17%) had a low level of interdependence, and 6 of 18 (33%) had no reference. Looking at the teacher candidates who were not exposed to Cognitive Coaching the reflective notes revealed that 1 of 18 (1%) teacher candidates exhibited high levels, 2 of 18 (11%) had moderate levels, 5 of 18 (28%) had low levels, and 10 of 18 (56%) had no reference to interdependence.

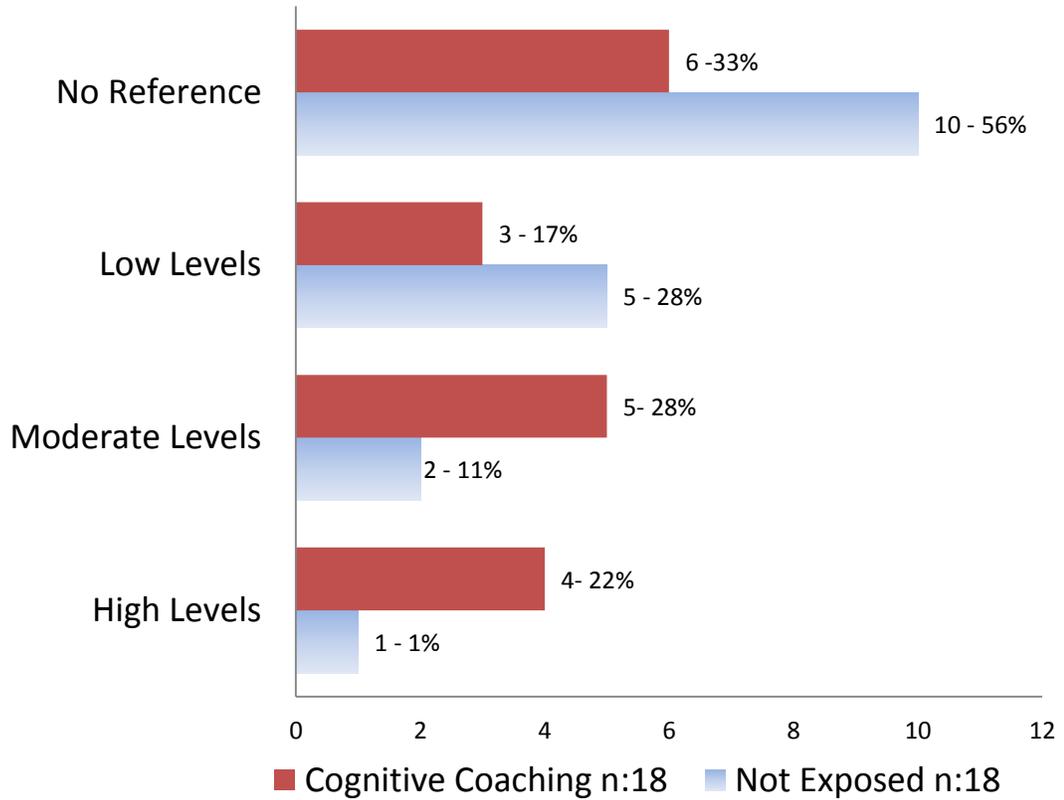


Figure 5. Comparisons of teacher candidates levels of interdependence

The researcher also concluded that the group exposed to Cognitive Coaching used a limited amount of words and phrases as compared to the other states of mind. The results can be seen in Table 8. (Additional data can be seen in Appendix I.)

Table 8

Comparisons Words and Phrases for Interdependence

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Words Indicating Interdependence	
Helpful	Advice

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Team (3 times)	Encouraged
Discussing	Helpful
Apply	Ideas
Depending	
Conferencing	
Learning	

Phrases Indicating Interdependence

Dr. ____ said . . .

I was able to meet with _____, they were extremely helpful because she was able to give me more ideas . . .

Teams of teachers

Able to give advice . . .

I definitely want to learn from other teachers some better methods or way to teach . . .

We are encouraged to . . .

Thankful for the opportunity to meet with teachers and learning from all of them.

In my own teaching, I am going to apply these bits of wisdom more regularly.

Teaching a classroom is much more than implementing lessons. Children are depending on us. . . . Parents are depending on the teacher for conferences, same grade-level teachers are depending on them for advice . . .

I am so thankful for the opportunity to work with teachers in the third grade, because I am learning from all of them.

Discussing their behaviors with my CI helped.

I want . . . to be a team.

Note: All words and phrases were direct quotes taken from reflective journals.

Summary

This study was designed to determine the impact that Cognitive Coaching had on the reflective journaling of teacher candidates. After careful examination of the individual cases, several patterns emerged. The cross case analysis revealed that the cases exposed to Cognitive Coaching showed higher levels of the five states of mind. Both cases scored high in the areas of efficacy, consciousness, and craftsmanship. However, the biggest difference between cases exposed to Cognitive Coaching compared to those that were not exposed to Cognitive Coaching was in flexibility and interdependence. Although there were very few cases that scored high in interdependence 12 of 18 teacher candidates that were exposed to Cognitive Coaching had some reference and in the cases that were not exposed only 8 of 18 had some reference to interdependence. Overall, the study revealed that the cases that were exposed to the Cognitive Coaching model had higher levels for each state of mind.

CHAPTER FIVE

Summary

There is an overwhelming consensus that the key to better schools is to have better teachers. To achieve this goal, teachers must be prepared with the necessary skills to teach all learners, as well as enhance the components that make teachers effective. Evidence suggests that teachers go through many developmental stages when learning to teach (Kagan, 1992; Witherall & Erickson, 1978). Costa and Garmston (1994) presume that the more teaching and learning experiences provided the more refined a teacher's performance will be. No amount of experiences alone will increase the mental capacity of teachers (Costa & Garmston, 1994). Capacities will only be developed if teachers are provided with the opportunities to reflect on their practice.

Cognitive Coaching is a method of instruction that recognizes the strength in thinking about thinking. Cognitive Coaching provides teachers a way to increase efficacy (Edwards & Newton, 1995), become more conscious of the act of teaching (Ellison & Hayes, 2009), and improve their teaching by becoming skillful decision makers (Costa & Garmston, 1994). Cognitive Coaching lays the foundation for and establishes the expectation for reflective practice (Ellison & Hayes, 2009). With the combination of reflective journaling and exposure to Cognitive Coaching teacher candidates are better supported and will be able to maximize the benefits from their classroom experiences.

Few studies have investigated the impact of coaching in teacher education, and there are even fewer studies that focused on Cognitive Coaching specifically. The purpose of this study was threefold. First, there exists a need for more studies that investigate the impact of Cognitive Coaching on teacher candidates. This study attempted to extend the current literature by measuring the impact that Cognitive Coaching had on the reflective journaling of teacher candidates.

Second, through the integration of theory in practice, Cognitive Coaching encourages teacher candidates to engage in thinking metacognitively. Research shows that reflecting on practice that is well supported and structured is an imperative part in the process in becoming a teacher (Ghaye, 2011). Reflection is gaining more popularity in teacher education and we must remember that this practice should be supported. Reflections that are not supported can turn into meaningless descriptive accounts, rather than careful analysis of the experience (Bain, 2002). Reflection that is purposefully planned can be developed and used as a valuable tool for learning (Bain, 2002).

Third, through the exposure of Cognitive Coaching, teacher candidates will develop a strong repertoire of metacognitive skills that will positively impact their teaching and encourage them to continuously reflect on their practice. With the addition of Cognitive Coaching, teacher educators can empower teacher candidates to see beyond a particular problem or issue using the five states of mind as a filter to come to a solution.

The archived data examined consisted of 36 reflective journals written by junior level teacher candidates that were exposed or not exposed to Cognitive Coaching. The archived data came from teacher candidates that were part of a junior level practicum that was required for all students majoring in education. The practicum took place in the

spring of 2010 and the spring of 2011. Each teacher candidate was provided a weekly reflection prompt and was asked to reflect on an experience that took place during their 13-15 week field experience.

The purpose of this study was to determine the impact that Cognitive Coaching had on teacher reflection as evidenced in journals. The examination of the research questions guided the current study and directed the process of analyzing the archived data. The sub-questions were formulated to help address the overarching question of whether or not Cognitive Coaching impacted the reflective journaling of teacher candidates.

Summary of Results by Sub-question

Research Sub-question 1: Efficacy

Research Sub-question 1 asked whether or not teacher candidates exposed to Cognitive Coaching showed more confidence or a greater sense of self efficacy in their reflective journals. Results indicated that teacher candidates who were exposed to Cognitive Coaching had higher levels of efficacy and were more confident than teacher candidates who were not exposed to Cognitive Coaching.

Teacher candidates who were exposed to Cognitive Coaching identified what they knew, needed to know, and developed strategies for attainment. They learned from their experiences and shaped themselves accordingly. This group of teacher candidates focused on how they could make the biggest impact when teaching. All teacher candidates who were exposed to Cognitive Coaching made reference to efficacy on some level in their reflective journals. Teacher candidates who were not exposed to Cognitive

Coaching used more self doubting words in their journals and had various levels of uncertainty about their methods used for teaching. Although, some of the teacher candidates were able to identify what they learned from their experiences, a small percentage was unsure of the resources needed to make an impact and lacked the sense of belief in their abilities.

Efficacious individuals are confident and know that their actions will make a difference (Ellison & Hayes, 2009). High efficacy individuals are optimistic when devoting energy to challenging tasks and engage in cause and effect thinking when faced with a problem (Costa & Garmston, 2002). Low efficacy individuals tend to blame others when things go wrong, feel more stressed, and are less confident in their teaching (Costa & Garmston, 2002). When teachers are confident in their teaching abilities and show high levels of efficacy, their student's mastery of basic skills will increase (Ashton & Webb, 1986; Rosenholtz, 1989). "The process of Cognitive Coaching in and of itself builds efficacy (Ellison & Hayes, 2009, p. 77). Based on the results of the study, it can be assumed that teacher candidates who are exposed to Cognitive Coaching know that their actions make a difference and they are more likely to shape themselves accordingly to learn from their experiences.

Research Sub-question 2: Flexibility

Research Sub-question 2 asked whether or not teacher candidates exposed to Cognitive Coaching would show more flexibility in their reflective journals as compared to teacher candidates who were not exposed to Cognitive Coaching. Teacher candidates who were exposed to Cognitive Coaching identified how they generated ideas and used multiple options to move forward when teaching. When faced with challenges or

challenging behaviors these candidates did whatever it took to make the situation more successful. This group of teacher candidates varied their methods of instruction and differentiated to meet the individual needs of their students. In their reflective journals they looked at alternative ways to solve problems and were not afraid to try them. All teacher candidates who were exposed to Cognitive Coaching made reference to flexibility on some level in their reflective journals. Results indicated that teacher candidates who were exposed to Cognitive Coaching exhibited slightly higher levels of flexibility than teacher candidates who were not exposed to Cognitive Coaching.

Of the teacher candidates who were not exposed to Cognitive Coaching the flexibility levels varied in their reflective journals. Four candidates made no reference to flexibility in their reflective journals. Of these teacher candidates, none knew that they needed to be flexible and they lacked the ability to move beyond their internal lenses. These candidates were unable to discuss or implement a plan to change the situation.

Flexible individuals are risk takers who look at life as a learning opportunity with problems to solve (Costa & Garmston, 1994). Ellison and Hayes (2009) believe that individuals who exhibit low creativity and high rigidity have low flexibility. Therefore it can be assumed based on the results of the study that teacher candidates who are exposed to Cognitive Coaching have the ability to look at situations from a different perspective and use multiple options to solve problems experienced when teaching.

Research Sub-question 3: Consciousness

Research sub-question 3 asked whether or not teacher candidates who were exposed to Cognitive Coaching showed more consciousness in their act of teaching in their reflective journals. Teacher candidates who were exposed to Cognitive Coaching

were aware of their feelings, thoughts, and beliefs. In their writing they expressed the importance of reflecting about their classroom teaching experiences. This group of teacher candidates set goals and had the ability to track the process of their thinking. Results indicated that teacher candidates who were exposed to Cognitive Coaching exhibited slightly higher levels of consciousness than teacher candidates who were not exposed to Cognitive Coaching. Results also indicated that all teacher candidates who were exposed to Cognitive Coaching made reference to consciousness on some level in their reflective journals. However, of the teacher candidates who were not exposed to Cognitive Coaching at least four made no reference of consciousness in their reflective journals. These individuals were not conscious of their actions and how this impacted their teaching.

Conscious teachers are individuals who are self directed and are knowledgeable about their thoughts and feelings. Costa and Garmston (1994) found that conscious individuals have the ability to respond to cues while keeping themselves and their students on task. Highly conscious individuals monitor their thoughts and behaviors in order to examine or challenge their response to certain events that may occur (Costa & Garmston, 2002). Based on the results of the study, it can be assumed that teacher candidates who were exposed to Cognitive Coaching are better able to monitor and reflect on experiences that lead to self-awareness.

Research Sub-question 4: Craftsmanship

Research Sub-question 4 asked whether or not teacher candidates who were exposed to Cognitive Coaching showed more craftsmanship in their reflective journals. This group of teacher candidates set high standards for themselves and seek ongoing self-

assessment. They acknowledged that their teaching could be refined and were able to discuss ways to refine it. Results indicated that teacher candidates who were exposed to Cognitive Coaching exhibited significantly higher levels of craftsmanship than teacher candidates who were not exposed to Cognitive Coaching.

A craftsmanlike individual is focused more on quality rather than perfection. For craftsmanship to develop, experiences must be provided that enable teacher candidates to assess, refine, and improve their performance. High Craftsmanship individuals set high standards for themselves and are able to assess a situation in order to improve their own performance. Based on the results of the study, it can be assumed that teacher candidates who were exposed to Cognitive Coaching exhibited higher standards and will continue to refine their teaching by monitoring their own progress.

Research Sub-question 5: Interdependence

Research Sub-question 5 asked whether or not teacher candidates who were exposed to Cognitive Coaching showed more interdependence in their reflective journals. Results indicated that teacher candidates who were exposed to Cognitive Coaching exhibited slightly higher levels of interdependence than teacher candidates who were not exposed to Cognitive Coaching. These teacher candidates tried hard to contribute to the common good. They were confident in their methods of teaching, but knew when to seek help or resources from others. Results indicated that all teacher candidates whether exposed or not exposed to Cognitive Coaching had trouble reaching the highest levels of interdependence in their reflective journals. This could be because Interdependence draws on the idea of our ability to see relationship rather than thinking in isolation (Ellison & Hayes, 2009). This is a difficult task for both teacher candidates and in-

service teachers to do because it requires them to see themselves as part of a system. Teachers are so overwhelmed with working with the students it can be easy to forget the importance of communicating with other adults.

Interdependent individuals recognize the value of hard work and see themselves as part of something bigger. They recognize the importance in working together to achieve a common goal. Environments that foster interdependence must be created for teacher candidates to grow intellectually. Highly interdependent individuals see conflict as a learning experience and learn from the feedback of others (Costa & Garmston, 2002). Based on the results of the study, it can be assumed that teacher candidates who are exposed to Cognitive Coaching are more conscious of how their own actions affect others and know when to ask for help.

Impact of Cognitive Coaching on Teacher Candidates

The findings of the current study suggest that Cognitive Coaching impacted teacher candidates by increasing all levels of the five states of mind. Costa and Garmston (1994) believe that the five states of mind (efficacy, flexibility, consciousness, craftsmanship, and interdependence) are the energy sources that fuel holonomous behaviors. Holonomous individuals are self reflecting and draw on their own strengths to grow (Costa & Garmston, 1994). For teacher candidates to continue to grow intellectually, educational environments that foster the five states of mind are needed. Costa and Garmston (1994) believe that an individual's state of mind can be influenced by another person. With the addition of Cognitive Coaching to teacher preparation, teacher candidates are provided the support necessary to develop the energy sources that impact holonomous behaviors. Based on the findings of this study, teacher candidates

who were exposed to Cognitive Coaching showed more confidence or had a greater sense of self efficacy, were more flexible when teaching, had a greater sense of consciousness in the act of teaching, exhibited higher levels of craftsmanship, and developed a higher level of interdependence.

These characteristics are important because each contributes to teacher effectiveness. With the goal of improving student achievement at the forefront of educational reform any strategies that improve teacher effectiveness should be incorporated into teacher preparation and teacher professional development. The work of a teacher is a continuous process of improvement and development (Ellison & Hayes, 2009). Effective teachers seek opportunities to reflect on their practice and to deepen their thinking. Studies indicated that thinking about and reflecting on teaching experiences can be beneficial in shaping a teacher's attitudes, beliefs, knowledge, and practice (Cruickshank, 1987; Cruickshank et al., 2006; Han, 1995). "Cognitive Coaching provides the structure and the expectation for reflective practice" and without it, "opportunities for reflection and focused thinking become infrequent" (Ellison & Hayes, 2009, p. 89). As evidenced in the current study, teacher candidates who were exposed to Cognitive Coaching used more words indicating the five in their reflective journals and were able to learn more from their experiences.

Limitations of the Study

This study has several limitations. The first, probably the most important, is that this study assumes that Cognitive Coaching was implemented effectively and the archived reflective writing samples collected were all true statements.

Second, this study was limited to two years of archived writing samples collected from one major private university in Central Texas and involved two select sections of teacher candidates assigned to the same elementary school campus. Therefore caution must be exercised when attempting to generalize this study to other groups.

Third, the instrument for this study, the Reflective Writing Response Rubric was self constructed and scores were subjective in nature. The researcher could not completely control for bias due to the fact the researcher read the teacher candidates' reflective journals. Although the researcher attempted to control for bias through peer coding and peer reviews were utilized to confirm consistency in scoring, the validity of the findings may be limited by human subjectivity.

Implications for Future Research

There are many different opinions on the best way to prepare future teachers. However we can all agree that teacher quality is critical to student success. Teacher educators need to produce teacher candidates who are able to ask questions, reflect on their practice, and find ways to improve their practice (Lytle & Cochran-Smith, 1990). Cognitive Coaching is a method of instruction that fosters independent learning (Costa & Garmston, 1994) and helps individuals reflect on their experiences. When opportunities for practice and feedback are provided, teachers' skill development will increase (Barkley, 2005). Cognitive Coaching has the potential for improving the quality and strengthening the abilities of new teachers.

Teacher preparation will vary, but all result in preparing teachers to be successful in the schools of today. The key to developing a productive teacher is to provide him or her with the necessary skills to thrive. With predicted widespread teacher shortages in

the near future (Grossman, 1990) and high attrition rates, it is more important than ever for teacher preparation programs to produce highly qualified teachers. As the need for teachers continues to grow the temptation to take shortcuts in teacher preparation will continue to increase (Grossman, 1990). Few studies have examined the impact that Cognitive Coaching has on teacher candidates. For this reason, it is important that research continues to explore and find the most effective ways to prepare teacher candidates to be successful in the early stages of their careers. Teacher candidates need to be provided with the necessary skills to grow and develop. For this to occur it is the responsibility of teacher preparation programs and teacher educators to provide systems that are supportive of reflective practices. Cognitive Coaching aids in the development of teacher candidates and provides conditions for maximizing their drive for self-directedness (Ellison & Hayes, 2009).

Professionals have a responsibility to those they serve to be continuous learners. Evidence showed that without coaching, there is little to no chance “of moving knowledge learned in training to important arenas of application” (Ellison & Hayes, 2009, p. 81). It is known that teacher preparation programs will not be able to prepare teachers with all of the knowledge and skills needed throughout their careers (Feiman-Nesmer, 1983). For this reason it is crucial that teacher educators prepare teacher candidates to develop into holonomous individuals. Ellison and Hayes (2009) stated that:

Cognitive Coaching is grounded in an assumption that explicit processes are required to facilitate learning. Learning is not linear, but is also not haphazard. Attention to structures and processes for learning enhances the likelihood for results and capacity for forward momentum. (p. 81)

The researcher’s findings suggest that Cognitive Coaching could be a beneficial addition to incorporate into future teacher preparation.

Many districts and schools have incorporated the coaching model for supporting teachers. Since coaching is such a valuable tool used to support in-service teachers, there exists a need to document the impact that Cognitive Coaching has in developing both in-service and preservice teachers. There appears to be a connection between Cognitive Coaching and effective teacher preparation. Longitudinal studies that follow teacher candidates who were exposed to Cognitive Coaching through their preparation and early stages of their careers are vital. Future research should focus on how to best use Cognitive Coaching in teacher development, identify the optimal time to introduce it, and if it will increase or improve student achievement. The importance of how we prepare teacher candidates demands that more information is needed about what features of Cognitive Coaching have the greatest impact on teacher development.

APPENDICES

APPENDIX A

Reflective Writing Response Rubric

Component	None (0)	Low levels (1-2)	Moderate (3)	High levels (4-5)	Score
Efficacy	No Reference	Candidate recognizes that they are learning from their experience. Not clear of exactly what and unable to identify clear defined strategies.	Candidate learns from their experience and able to identify what they don't know and needs to know or do.	Candidate learns from their experience and shapes themselves accordingly. Able to identify what they don't know, needs to know or do, and develops strategies for attainment. Focuses on using their resources to make the biggest difference or impact.	
Flexibility	No Reference	Candidate recognizes and shows some understanding of being able to shift perspectives	Candidate is able to shift perspectives, shows an understanding and uses a repertoire of thinking and processing skills.	Candidate is able to shift perspectives and uses a wide repertoire of thinking and processing skills. When stuck, generates and uses multiple options for moving ahead.	
Consciousness	No Reference	Candidate has some awareness of his or her own assumptions, knowledge, and certain events that are occurring.	Candidate is aware of his or her assumptions, knowledge, core values, norms, and identity. Aware of criteria for decision making to shape certain events.	Candidate is aware of his or her assumptions, knowledge, core values, norms, and identity. Aware of criteria for decision making and able to reflect to help determine the course taken to change certain events in the future.	
Craftsmanship	No Reference	Candidate acknowledges that performance should be refined.	Candidate acknowledges that performance should be refined and discusses how to refine it.	Candidate acknowledges that performance should be refined, discusses how to refine it, and exhibits high standards.	
Interdependence	No Reference	Candidate contributes to the common good and is aware of the need to draw on the resources of others.	Candidate contributes to the common good and has the ability to draw on the resources of others.	Candidate contributes to the common good, strives for precision, and has the ability to draw on the resources of others.	

Note: Modified with use of language from the book, *Cognitive Coaching: Weaving threads of learning and change into the culture of organization*, Figure 9-2, *Group Manifestations of States of Mind*, written by J. Ellison & C. Hayes (2003).

Total Score: _____ Comments:

APPENDIX B

Weekly Reflection - Required Format

Required format: (Typed)

Part 1: Anecdotal record. Each week choose an experience that you had with your students. Think of it as a moment or a snapshot. The experience may have been pleasant or uncomfortable, rewarding or frustrating, a revelation or a puzzle. In your journal entry, describe the experience with as much detail as possible. Include as much as the verbatim verbal interaction as you can remember. Refrain from including any interpretation of the experience in this description.

Part 2: Interpretation and analysis. Write an explanation of your interpretation of this experience, that is, what you think it means and why you think so. Specifically, explain what it tells you about your students and what they are learning (or not learning) and/or explain what it tells you about learning to be a teacher.

APPENDIX C

Cognitive Coaching

How does Cognitive Coaching impact the reflective journaling of teacher candidates?

- 1) Do candidates exposed to cognitive coaching show more confidence or a greater sense of efficacy in their reflective journaling?
- 2) Do candidates exposed to cognitive coaching show more flexibility in their reflective journaling?
- 3) Do candidates exposed to cognitive coaching show more craftsmanship in their reflective journaling?
- 4) Do candidates exposed to cognitive coaching show more consciousness of the act of teaching in their reflective journaling?
- 5) Do candidates exposed to cognitive coaching display more interdependence in their reflective journaling?

Group 1

Efficacy	Flexibility	Consciousness	Craftsmanship	Interdependence

APPENDIX D

Not Exposed to Cognitive Coaching

How does Cognitive Coaching impact the reflective journaling of teacher candidates?

- 1) Do candidates exposed to cognitive coaching show more confidence or a greater sense of efficacy in their reflective journaling?
- 2) Do candidates exposed to cognitive coaching show more flexibility in their reflective journaling?
- 3) Do candidates exposed to cognitive coaching show more craftsmanship in their reflective journaling?
- 4) Do candidates exposed to cognitive coaching show more consciousness of the act of teaching in their reflective journaling?
- 5) Do candidates exposed to cognitive coaching display more interdependence in their reflective journaling?

Group 2

Efficacy	Flexibility	Consciousness	Craftsmanship	Interdependence

APPENDIX E

Teacher Candidates Words and Phrases Indicating Efficacy - Sub-question 1

Table E1

Did candidates exposed to Cognitive Coaching show more confidence or a greater sense of efficacy in their reflective journaling?

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I learned a great deal . . . (8 times)	I think I can
I will have to . . .	I learned (6 times)
I might . . .	I think that it's important (3 times)
Respond	I was pretty nervous
Keep her engaged (2 times)	Fail
Meeting the needs (2 times)	I was pleasantly surprised
Modeling	Great experience (2 times)
Example	This experience tells me that I am learning
Interaction inspired	Began to worry that my activity would fail (2 times)
Successful	I don't know
Provide opportunities	Difficult
I planned . . . (5 times)	
Definitely want to learn	
Much more than	
Effective	
Students fully understood	
I liked how I	
It was helpful	
Worked out well (1 times)	

Note: The number in the () indicates how many additional times a response was repeated by different candidates. All words and phrases were direct quotes taken from reflective journals.

APPENDIX F

Teacher Candidates Words and Phrases Indicating Flexibility – Sub-question 2

Table F1

Did candidates exposed to Cognitive Coaching show more flexibility in their reflective journaling?

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Differentiate (4 times)	Change
Flexible (1 time)	Differentiation
Change (1 time)	Plan
Start over	Decided (2 times)
Prepared	Different
Shift or Altered	Make exceptions
Different (3 times)	I have to be flexible . . .
Transition	I decide instead of rushing through the next day to catch up, I will just push back everything.
Reconsider	Had to switch gears
Assist	Change in plans (1 time)
Planned	I decide that we work together
I went ahead and said, Okay that's fine.	Needed a second chance
Able to understand	Had to step in to assist
Try something new or different	I focused on helping
It is so important to be able to think on your feet as a teacher and shift strategies immediately if your student are not understanding or are not understanding or becoming frustrated.	. . . go back and re-teach something
Make it work	I am not sure the best way to handle this . . .

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
If you change your strategy and have a plan for differentiation, then you students are going to be able to recover.	I need to go back and cover a topic again before moving on.
Keeping models I have in my classroom diverse.	Need to take a step backwards
I tried many different methods.	Practicing each day my students were able to . . .
. . . many roles as a teacher.	I am going to need to be flexible.
I tried something a bit different with my kids.	
Working in two different stations worked out so well for my kids.	
Process was successful.	
My students will not always need what is on that piece of paper, so I need to be flexible and instruct them as their assessment leads.	

Note: The number in the () indicates how many additional times a response was repeated by different candidates. All words and phrases were direct quotes taken from reflective journals.

APPENDIX G

Teacher Candidates Words and Phrases Indicating Consciousness – Sub-question 3

Table G1

Did candidates exposed to Cognitive Coaching show more consciousness of the act of teaching in their reflective journaling?

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Realized	Realize
Eye-opening	Impact
Reflect	Understand
Reviewed	Surprised
Transition	Helped
Refer	I don't . . .
Felt	I am assuming that it is all connected.
Helped	This could explain why . . .
In the future . . . (4 times)	I could encourage . . .
I realized . . . (8 times)	Helped me to grow . . .
Important to . . . (1 time)	More ideas and ways to push my students . . .
I felt . . .	I will have to pay attention.
I will . . .	Take a step backwards . . .
I reflect . . . (3 times)	I was happily surprised . . .
Eye-opening . . . (4 times)	After this experience I will . . .
Taken for granted . . .	I was clear to me . . .
Depending on us . . . (4 times)	
Your response that is going to make or break you as a teacher.	
I didn't realize . . .	

Exposed to Cognitive Coaching

Not Exposed to Cognitive Coaching

As I was reflecting (2 times)

This helped minimize distraction . . .

This has really made an impact on me

The increased levels of
communication . . .

The process was a bit overwhelming . . .

Made me want to . . .

Note: The number in the () indicates how many additional times a response was repeated by different candidates. All words and phrases were direct quotes taken from reflective journals.

APPENDIX H

Teacher Candidates Words and Phrases Indicating Craftsmanship – Sub-question 4

Table H1

Did candidates exposed to Cognitive Coaching show more craftsmanship in their reflective Journaling?

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Reflecting	Re-teaching
Impact	Need (3 times)
Continue	Decided
Future (4 times)	Re-direct
High Standards	Important
Experience	I think I should spend more time evaluating . . .
Respond (1 time)	Great way to motivate . . .
Need (4 times)	Work on as a teacher . . .
Monitored	I decided . . .
Important	I need to be more prepared.
I have learned from my experiences . . .	It showed me . . .
I need to learn more about how to meet my students' needs.	This connection helped me . . .
If this happens again, I might respond . . .	I will not revert back to our old . . .
In the future I will . . .	I knew I made the tiles very challenging . . . so I pushed them.
It was a good motivator . . .	I could see their confidence building as they succeeded.
. . . provide what my students need.	This was a great way to motivate the students . . .
I will continue to . . .	They aren't challenged enough . . .

(continued)

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
I felt as though there was probably a better way to handle it.	. . . more ideas of ways to push my students rather than keeping them at the level they are right now.
In the moment redirect him and hold him accountable.
Provide what they need . . .	I will have to pay more attention . . .
Being organized, responsible, and available is imperative if a classroom is going to run smoothly.	I will need to address the problem . . .
This lesson showed me how diverse students can be in one classroom and how the teacher needs to cater her lesson to meet every student's needs.	. . . areas I need to work on as a teacher.
. . . opened my eyes on how I should help teach them to foster their growth and learning.	. . . how important it is to . . .
It is important to always meet the needs of my students.	I decide each day . . .
. . . find the best ways to teach your students.	I did not plan to . . .
I can use this experience . . .	I should be reviewing each lesson.
I will definitely carry this through with me . . .	I need to be prepared for them.
Respond in the moment . . .	I pushed them . . .
Begin to see . . .	
Showed me . . .	
Making an impact . . .	
Reflecting back . . .	
Incorporate in the future . . .	
I can use . . .	
Could have explained . . .	
I want individuals to know that their ideas are valuable.	
I cannot wait to use this activity in my future classroom.	

(continued)

Exposed to Cognitive Coaching

Not Exposed to Cognitive Coaching

Because of poor scores, intense remediation needed to be provided.

I review all of my assessment information, and planned accordingly to what they need.

It was so neat to see instruction driven by assessment . . .

Note: The number in the () indicates how many additional times a response was repeated by different candidates. All words and phrases were direct quotes taken from reflective journals.

APPENDIX I

Teacher Candidates Words and Phrases Indicating Interdependence – Sub-question 5

Table II

Did candidates exposed to Cognitive Coaching show more interdependence in their reflective journaling?

Exposed to Cognitive Coaching	Not Exposed to Cognitive Coaching
Helpful	Advice
Teach (2 times)	Encouraged
Discussing	Helpful
Apply	Ideas
Depending	I was able to meet with ____, they were extremely helpful because she was able to give me more ideas . . .
Conferencing	Able to get advice . . .
Learning	We are encouraged to . . .
Dr. ____ said . . .	
Team of teachers	
I definitely want to learn from other teachers some better methods or way to teach . . .	
Thankful for the opportunity to meet with teachers and learning from all of them.	
In my own teaching, I am going to apply these bits of wisdom more regularly.	
Teaching a classroom is much more than implementing lessons. Children are depending on us. . . . Parents are depending on the teacher for conferences, same grade-level teachers are depending on them for advice . . .	

(continued)

Exposed to Cognitive Coaching

Not Exposed to Cognitive Coaching

I am so thankful for the opportunity to work with teachers in the third grade, because I am learning from all of them.

Discussing their behaviors with my CI helped.

I want . . . to be a team.

Note: The number in the () indicates how many additional times a response was repeated by different candidates. All words and phrases were direct quotes taken from reflective journals.

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