CAN PRESERVICE TEACHERS BE TAUGHT TO BECOME

REFLECTIVE THINKERS DURING THEIR FIRST INTERNSHIP EXPERIENCE?

by

Stephanie Stuart Sams Weber

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

Stephanie Stuart Sams Weber. CAN PRESERVICE TEACHERS BE TAUGHT TO BECOME REFLECTIVE THINKERS DURING THEIR FIRST INTERNSHIP EXPERIENCE? (Under the direction of Dr. Karen Parker, Dean of Education) School of Education, Liberty University, April, 2013.

Reflective thinking is a developmental process that progresses over time from a technical, routine level to a critical, self-evaluating level. Preservice teachers, who tend to stay in the technical, routine level of critical thinking without guidance, need to be taught how to become reflective thinkers so that they are able to identify and analyze their own personal teaching practices, connect theory with practice, and understand why they are teaching. By learning to be more critically reflective in their thinking, preservice teachers will become more effective teachers, thus having a positive impact on student achievement. This dissertation research study quantitatively evaluated the written reflections of first semester preservice teachers during their first semester internship experience to determine if, after receiving explicit instruction about reflective practices, their reflective thinking abilities improved over the course of the semester. The findings in this study determined that after receiving explicit instruction on reflective thinking over the semester, 66% of the preservice teachers showed an increase in their total score suggesting that reflective thinking skills can, in fact, be taught.   Although this study was explored through one specific teacher preparation program, the findings and suggestions are relevant to other programs and other state education standards.

Descriptors: reflective thinking, preservice teachers, explicit instruction

Dedication

Many years ago, this doctoral candidate would not have imagined the path in which the Lord has led her. It is to His honor and glory that this research dissertation is lovingly dedicated. Without the Lord's loving guidance, it would not have been possible. To Him be the glory and honor forever and ever.

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CHAPTER ONE: INTRODUCTION

This dissertation is a study on whether first-semester preservice teachers enrolled in a teacher preparation program at a university in south Florida can be taught to be more reflective thinkers during a one semester course. The teacher preparation program at this particular university decided a few years ago that the process of reflective thinking would be one of three major tenants of its mission statement. In accordance with this university's tenant of reflective thinking, this study will review, compare and score two of the written reflections for each of forty-seven preservice teachers enrolled in the university's teacher preparation program who are completing their first-semester internship experience. The study will begin with the preservice teachers completing a short demographics questionnaire to provide information on the subjects being researched. They, as well as the university supervisors, will score the written reflection from week two of the class and again score the written reflection from week twelve. Between these two points in time, the preservice teaches will receive explicit instruction on becoming more reflective thinkers.

This first chapter discusses the background of the study, identifies the problem, the research question and hypothesis for the study, and describes the purpose for the study. The chapter concludes with a list of key terms and their definitions.

Background of the Study

Each day, teachers across Florida are striving to meet the academic standards that have been established by the state of Florida (Title XLVIII; K-20 Education Code, 2002), as well as by the federal government (Public Law 107-110, 2002), for their students. These educational standards, which are divided by grade level, have been established so

that all students, regardless of where they live, are taught similar academic and social skills. In order to meet these educational standards, it is important that teachers understand how being a critically reflective thinker can help them become more effective teachers, thus increasing student achievement (Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009).

The United States Department of Education reported that the average length of the school day across the nation is 6.7 hours for elementary school and 6.6 hours for all public schools (Schools and Staffing Survey "Public School Questionnaire, 2007-08). For students in Florida, the United States Department of Education Schools and Staffing Survey "Public School Questionnaire" 2007-08, found that elementary students attended school an average of 6.5 hours while students in all of the Florida public schools attended school an average of 6.4 hours each day. Because of the limited time that students living in Florida spend in a school environment, teachers, in Florida schools specifically, have to effectively manage their diverse classroom environments so that students are making significant academic, as well as social, gains set forth locally, regionally and nationally.

According to Minor, Onwuegbuzie, Witcher, & James (2002), effective teachers are reflective thinkers who are empathetic toward their students' needs academically and socially. They also

> are subject specialists who are able to select, organize, and deliver content; are
> efficient and effective in the use of instructional time; and are able to vary their
> teaching strategies according to student needs. Effective teachers are creative,
> encourage active student participation, make relevant assignments, arrange for

plenty of successful engaged time, are skillful in using questions, promote critical

and creative thinking, and use wait time when seeking student response. In

addition, they provide feedback, monitor programs and student progress, use both

traditional and alternative assessment, and are fair in assessment and grading

procedures (p. 117).

In other words, effective teachers are the teachers who are able to reflect on the diverse

classroom situations that arise each day so that they can implement the best possible

solutions to ensure that student achievement increases.

To best facilitate student learning and make decisions concerning the academic

and social issues that arise in their classrooms, as well as make connections and develop

innovative solutions and strategies for those particular situations, teachers need to

become reflective thinkers (Boyd, Boll, Brawner, & Villaume, 1998; Day, 1993; Ewart &

Straw, 2005; Giovannelli, 2003; Larrivee, 2000, 2008; Ostorga & Estrada, 2009; Pihlaja

& Hoist, 2011; Rosen, 2008; van Manen, 1977). John Dewey (1933), an American

educator, psychologist and philosopher, defined reflective thinking as "active, persistent,

and careful consideration of any belief or supposed form of knowledge in the light of the

grounds that support it and the further conclusions to which it tends" (p.9). Teachers

who are reflective thinkers are the ones who will respond to a situation in their classroom,

after assessing the situation as a whole, to determine the best solution, instead of just

completing a prescribed checklist to solve the situation in isolation.

Claire Stanley (1998) determined from her longitudinal study of six teachers that

"learning to think reflectively is a skill" (p. 586) and that the skill is not based on simply

what has occurred in the classroom during the day. In this study, she determined that

when teachers develop skills, such as recognizing partiality to a specific child in their class or inefficient classroom management techniques, then reflective thinking will begin to be implemented. Preservice teachers need to acquire these reflective thinking skills in order "to make an immediate decision about how to respond to a particular problem" (Romano, 2005, p. 258) and most effectively promote student learning.

Reflective teachers seek to discover the source of an issue or problem rather than simply be satisfied with a temporary solution. Reflective thinkers seek to learn and develop the necessary skills that assist them in analyzing an academic or social situation and arrive at a conclusion that best fits that particular situation, as well as benefits those involved (Thorsen & DeVore, 2013). Teachers who are not skilled in reflective thinking will respond to these academic and social issues automatically without attempting to discover any more appropriate possibilities or connections to other issues (Boyd, Boll, Brawner, & Villaume, 1998; Dewey, 1933; Hagevik, Aydeniz, & Rowell, 2012; Larrivee, 2006).

Although reflective thinking is highly important to teacher, as well as student, success, "repeated exposure to reflection alone fails to help students [of education] engage in higher levels of critical reflection" (Bean & Stevens, 2002, p. 207). According to Gür Şahin & Dikkartin Övez (2012), "reflective thinking is an essential element of the education process" (p. 569); it is a skill that should be taught within the parameters of the teacher preparation program (Bates, Ramirez, & Drits, 2009: Bean & Stevens, 2002; Boyd, Boll, Brawner, & Villaume, 1998; Collier, 1999; Davis, 2006; Day, 1993; Francis, 1995; Francis, Tyson, & Wilder, 1999; Freese, 1999, 2006; Gitlin, Barlow, Burbank, Kauchak, & Stevens, 1999; Griffin, 2003; Hattan & Smith, 1995; Jay & Johnson, 2002;

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Lee, 2008; Mahlios, Engstrom, Soroka & Shaw, 2008; Marcos, Sanchez, & Tillema, 2011; Nagle, 2008; Norsworthy, 2009; Ostorga & Estrada, 2009; Pihlaja & Hoist, 2011; Pultorak, 1996; Rhine & Bryant, 2007; Russell, 2005; Schön, 1987; Thorsen & DeVore, 2013; Valli, 1997).

The internship experience, which is mandated for teacher preparation programs by the National Council for Accreditation of Teacher Education (2008), is when preservice teachers are exposed to diverse aspects of being a teacher such as "classroom management, motivation, reflective thinking and differentiation" through immersion in an actual functioning classroom (Kennedy & Archambault, 2012, p. 186). Teacher preparation programs use different terminology for this type of internship experience within their programs, such as field experiences, clinical experiences, practica, or apprenticeships.   No matter what they are labeled, these experiences provide preservice teachers with hands-on practice interacting with school-aged students under the guided supervision of a trained teacher, as well as a university supervisor. For the purposes of this study, the term *internship* will refer to the hands-on classroom experience that relates to the preservice teachers that participated in this study. Additionally, the term *preservice teachers* will be used to identify students of education who have not yet worked as independent, licensed teachers.

The internship affords preservice teachers the opportunity to implement and merge the techniques and strategies that they have been learning in their educational courses with the experiences and situations of their internship classrooms in order to become effective teachers (Bates, Ramirez, & Drits, 2009; Dewey, 1904; Ewart & Straw, 2005; Griffin, 2003; Ostorga & Estrada, 2009; Rhine & Bryant, 2007; Seng, 2001;

Thorsen & DeVore, 2013; Yeh, 2004). For these preservice teachers, the experiences

gained in their internships guide them to become "more aware of themselves and their

environments in a way that changes their perceptions of what is possible" (Zeichner &

Liston, 1987, p. 25).

Although through the teaching experience students learn invaluable lessons, often

they are given little to no direction on how to effectively connect, reflect and synthesize

what they are experiencing within the walls of the classroom with what they are learning

in their education coursework (Bates, Ramirez, & Drits, 2009; Ewart & Straw, 2005;

Griffin, 2003; Ostorga & Estrada, 2009; Rhine & Bryant, 2007; Seng, 2001; Thorsen &

DeVore, 2013; Yeh, 2004). To make these connections and reach their full potential as

teachers, preservice teachers must acquire the ability to be reflective thinkers.

Consequently, it is appropriate, and perhaps even an ethical requirement, for teacher

education programs to teach and promote reflective thinking.

Part of instructing preservice teachers in becoming reflective thinkers is teaching

them how to look at themselves in terms of various classroom situations. This level of

insight is perhaps most effectively taught and learned within the confines of the

internship classroom, where preservice teachers learn the skills necessary for identifying

their own reflective thinking process (Bean & Stevens, 2002; Davis, 2006; Griffin, 2003;

Larrivee, 2006; Nagle, 2008; Silcock, 1994). In order to gain insight into their own

teaching practices, Postlethwaite & Haggarty (2012) acknowledge that preservice

teachers are a "key player in their own learning" (p. 266). Therefore, it is imperative that

the teacher preparation programs provide a positive learning environment "that presents

wide-ranging and diverse opportunities to learn, in a culture that values and supports

learning" (Hodkinson & Hodkinson, 2005, p. 123) ensuring that their preservice teachers will be reflective, more effective teachers by the time they begin their teaching careers.

In the educational teacher preparation program at a nationally and regionally accredited university in southern Florida, the preservice teachers are required to maintain weekly written reflections describing and explaining what they are experiencing in the classroom during their semester of their internship experience. They are provided with a *Weekly Reflection Journal/Log* form (Appendix A), which is to be used as a guide for writing their weekly reflections. These preservice teachers are instructed to submit their weekly reflection online through the university's website each Monday following the day of their internship. These reflections are then accessed and read by their assigned university supervisor who responds to any comments, questions or concerns noted in the preservice teacher's reflection.

Though they are required to write about their personal experiences in the classroom, the reflections of these preservice teachers on the whole tend to be descriptive narratives that are technical and routine in nature, discussing such issues as concerns about keeping students on task, time management, frequent interruptions, and classroom behaviors that interfere with meeting lesson objectives (Collier, 1999; Francis, Tyson, & Wilder, 1999; Gitlin, Barlow, Burbank, Kauchak, & Stevens, 1999; Hoover, 1994; Jay & Johnson, 2002; Pihlaja & Holst, 2011; Stanley, 1998; Sutherland, Howard & Markauskaite, 2010). In many of these written reflections, the preservice teachers "place primary importance on themselves as teachers, as opposed to on children as learners" (Davis, 2006, p. 282). Improvements in reflective thinking abilities assist preservice

teachers in focusing on students and better recognizing how the classroom dynamics impact student learning.

When the preservice teachers begin to view their students as learners, they are able to focus on more than the descriptiveness of issues, such as classroom management, writing lessons, submitting course assignments and supervisor evaluations; they are focused more on attaining student achievement using best practices. Because it is difficult for preservice teachers to reach a less descriptive level of reflection, teacher preparation programs should scaffold the teaching of reflective thinking for their preservice teachers so that they will be better prepared "to cope with the daily issues that arise from their future teaching with a creative and critical stance" (Lee, 2008, p. 137).

Problem Statement

It is generally agreed that reflective thinking improves a teacher's effectiveness and student learning (Fendler, 2003; Francis, Tyson, & Wilder, 1999; Giovannelli, 2003; Hourani, 2013; Marcos & Tillema, 2006; Mayes, 2001; Romano, 2005). The question thus becomes: is reflective thinking a process that can be taught? Though some researchers, including Edwards & Thomas (2010), believe that reflective thinking is not a process that can be taught to preservice teachers in their teacher preparation programs, there are many educational professionals who support explicitly teaching preservice teachers to become reflective thinkers (Bates, Ramirez, & Drits, 2009: Bean & Stevens, 2002; Davis, 2006; Freese, 2006; Griffin, 2003; Lee, 2008; Mahlios, Engstrom, Soroka & Shaw, 2008; Marcos, Sanchez, & Tillema, 2011; Nagle, 2008; Norsworthy, 2009; Ostorga & Estrada, 2009; Pihlaja & Hoist, 2011; Thorsen & DeVore, 2013).

For this study, a small group of preservice teachers who were enrolled in their

first semester internship in a nationally and regionally accredited teacher preparation program completed an assessment instrument, the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment,* developed by Dr. Barbara Larrivee (2008), to analyze and score their own written reflections from week two and week twelve of the course. The same written reflections were analyzed and scored by a group of trained supervisors using the same assessment instrument. Over a ten week period during their large group seminars, these preservice teachers received explicit and direct instruction regarding the process of reflective thinking. Each student's scores on their two reflections were compared to determine if indeed the preservice teachers improved their reflective thinking skills.

Purpose of the Study

The purpose of this quasi-experimental research study was to determine if, after receiving explicit and direct instruction on the process of reflective thinking over a ten-week period in one semester, a group of preservice teachers could be taught to be more reflective in their thinking about teaching. Evidence was drawn from a comparison of their two-week and twelve-week written reflections.

Significance of the Study

Teachers need to consider the process of reflective thinking as a means of evaluating their own teaching practices to attain and increase student achievement (Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009). Since reflective thinking is such an important skill, this thinking process should begin in the teacher preparation programs. When preservice teachers use their internship experiences as a

point of reference and are taught how to be reflective thinkers, they begin to comprehend the importance of critical thinking. They are able to think through situations that occur during the day to determine the best possible solutions so that student learning is the least negatively impacted (Romano, 2005).

Many institutions of higher learning require teacher candidates to reflect on their internship experiences, typically through journal writing (Bell, Kelton, McDonagh, Mladenovic & Morrison, 2011; Bruster & Peterson, 2012; Davis, 2006; Francis, 1995; Francis, Tyson & Wilder, 1999; Freese, 2006; Hickson, 2011; Lee, 2008; Pultorak, 1993; Seng, 2001; Sutherland, Howard & Markauskaite, 2010; Thorpe, 2004). However, reflective thinking is not necessarily automatically learned; it is a process that needs to be taught to ensure that preservice teachers obtain the skills necessary to be the most effective teachers possible (Bates, Ramirez, & Drits, 2009: Bean & Stevens, 2002; Davis, 2006; Freese, 2006; Griffin, 2003; Lee, 2008; Mahlios, Engstrom, Soroka & Shaw, 2008; Marcos, Sanchez, & Tillema, 2011; Nagle, 2008; Norsworthy, 2009; Ostorga & Estrada, 2009; Pihlaja & Hoist, 2011; Thorsen & DeVore, 2013).

For this research study, reflective thinking was discussed, modeled and explicitly taught over a ten week period during large group, first semester internship seminars. This study will contribute to the research base concerning preservice teachers' reflective thinking practices, as well as being implemented into the educational philosophy of the teacher preparation program of the studied university. The findings may also be of interest to other universities who would like to include reflective thinking skills in their programs.

Research Question

This research study attempted to answer the following research question:

1. Will first-semester preservice teachers' written reflections demonstrate growth in reflective thinking after receiving explicit instruction concerning reflective thinking and practices?

In order to answer this question, this research study was conducted with first semester preservice teachers at a nationally and regionally accredited university in south Florida. Prior to this research study, one of the requirements for this course was for students to write and electronically submit weekly written reflections on their internship experiences (Appendix A). During the ten weeks of intervention when the reflective process was explicitly taught, the preservice teachers continued to post their weekly reflections via the university's electronic messaging board.

The preservice teachers' written reflections were randomly divided equally among the three supervisors, who had received prior training on using the survey. The supervisors analyzed and scored each written reflection that was assigned to them using and adaptation of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B). The forty-seven items on the survey instrument were scored with either a 0, 1, or 2; with 0 meaning that the item was not mentioned in the written reflection, 1 meaning it was mentioned but not discussed, and 2 meaning that the item was mentioned *and* discussed.

This ordinal data collected from the three supervisors was analyzed using the Wilcoxon Signed Rank statistical formula, which is "the nonparametric alternative to the

dependent *t*-test" (Martin & Bridgmon, 2012, p. 72), meaning that, when analyzing

ranked data it cannot be assumed to be normally distributed (McDonald, 2008). This test

was used to determine if, after receiving explicit instruction in reflective thinking and

practices, the preservice teachers' written reflections from week two and week twelve

demonstrated a growth in reflective thinking. The scores from the preservice teachers'

self-assessment scoring were also analyzed for the purpose of comparison to the scores

derived from the supervisors, but not as research data that would be utilized to ascertain if

there was any statistically significant change in the median scores pre-intervention and

post-intervention.

<div style="text-align:center">Null Hypothesis</div>

The null hypothesis for this research study was:

1. Using the Wilcoxon's Signed Rank test on the supervisors' score analysis,
    there will be no statistically significant positive change in the median score of
    the preservice teachers' written reflections from week two (pre-intervention)
    to week twelve (post-intervention) after four sessions of intervention.

The null hypothesis will not be rejected if the scores from the supervisors' analysis of the

preservice teachers' written reflections on their internship experiences reflect no

statistically significant positive changes after the ten weeks of intervention. However, the

null hypothesis will be rejected if there is a statistically significant positive change based

on the hypothesized change of the supervisors' scoring of the preservice teachers' written

reflections from the beginning of the semester to the end of the semester.

Identification of Variables

For this quasi-experimental research study, there was only one group of forty-seven participants with no random assignment to the participants. The participants were allowed to choose their research study identification number of one through forty-seven. For purposes of this study, the written reflections of each preservice teacher from weeks two and twelve were analyzed and scored by one of the three trained supervisors, as well as self-scored by the preservice teacher. The *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B) was adapted for use in this research study with the developer's approval (Appendix D).

A dependent variable is the part of the study which incurs a possible change (Hittleman & Simon, 2006). The data collected in this research study was determined to be nonparametric, meaning that the data was ranked and it did not follow a normal distribution; therefore, the median scores of the preservice teachers' written reflections from weeks two and twelve are considered to be the continuous dependent variables. The independent variable is the part of the study where the experimentation occurs (Hittleman & Simon, 2006). For this research study, the independent variable is the time of intervention, which is the ten-week period between the pre-intervention scoring and the post-intervention scoring of the written reflections.

During the ten weeks of intervention, the preservice teachers received explicit instruction in four large group seminars concerning reflective thinking and practices. The instruction covered basic background about reflective thinking, assisted in connecting several theories to their current internship experiences, and allowed students to observe

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reflective thinking being modeled by the researcher.   The preservice teachers were not

told what to include in their reflections, but suggestions that corresponded with the

various reflective thinking instructions were given to them for reference.

Definition of Key Terms

Each of the definitions given is relevant to the study and defined as follows:

Cronbach's Alpha: the accepted reliability test for parametric data; however when using

nonparametric data, the reliability of the instrument is usually underestimated.

(Gadermann, Guhn, & Zumbo, 2012)

Critical reflection: **"**The conscious consideration of the moral and ethical implications

and consequences of classroom practices on students" (Larrivee, 2006, p. 34).

Nonparametric data (distribution-free): ordinal data that cannot be assumed to be

normally distributed (McDonald, 2008); most beneficial with small sample sizes

(Fagerland, 2012).

Open-mindedness: "Freedom from prejudice, partisanship, and such other habits as close

the mind and make it unwilling to consider new problems and entertain new ideas"

(Dewey, 1933, p. 30).

Paired data: "the values in the two groups being compared are naturally linked, and

usually arise from individuals being measured more than once" (Shaw, Williams, &

Assassa, 2000, p. 584).

Parametric data: data that follows a probability distribution which infers normally

distributed parameters for the data (Clark-Carter, 2004).

Pedagogical reflection: **"**At this level, reflection is guided by a conceptual framework

and beliefs about teaching are grounded in theory or research" (Larrivee, 2006, p. 34).

Pre reflection: "At this level the teacher interprets classroom situations without thoughtful connection to other events or circumstances. The teacher's orientation is reactive, believing that situational contingencies are beyond the teacher's control" (Larrivee, 2008, p. 348).

Reflection-for-action: "Proactive thinking in order to guide future action" (Larrivee, 2006, p. 35).

Reflection-in-action: "Thinking about events in the classroom as they happen to make immediate adjustments" (Larrivee, 2006, p. 35).

Reflection-on-action: "Thinking back on what was done to gain deeper insight" (Larrivee, 2006, p.35).

Responsibility: "Taking ownership for the consequences of actions and their impact on students" (Larrivee, 2006, p. 35).

Self-reflection: "Examining how one's beliefs and values, expectations and assumptions, family imprinting, and cultural conditioning impact students and their learning" (Larrivee, 2006, p. 36).

Surface reflection: "At this level of reflection, the teacher's examination of teaching methods is confined to tactical issues concerning how best to achieve predefined objectives and standards" (Larrivee, 2006, p. 36).

t-test: a parametric test that assumes "the underlying distribution of the variable of interest is normally distributed" (Fagerland, 2012, p. 1)

Wholeheartedness: "Thoroughly interested in some object or cause" (Dewey, 1933, p. 31) or "genuine enthusiasm" (p. 32).

Wilcoxon Signed-Rank Test: **t**he nonparametric equivalent to the t-test that is used to test the difference between two population medians (McDonald, 2008; Moore & McCabe, 2003)

Summary

This chapter has provided a brief overview of the background, the purpose, the hypothesis, and the research question for this research study. Since teachers are required to meet federal and state mandated academic standards, they need to be effective in their teaching as well as classroom management so that student learning is maximized. To be effective in their teaching, teachers need to understand and utilize the process of reflective thinking which typically begins in the teacher education programs.

This research study next discusses the literature about reflective thinking and practices from various researchers in the education field. The study also includes a detailed section of how the study was conducted, as well as the results of the study and future implications.

CHAPTER TWO: REVIEW OF THE LITERATURE

This chapter discusses the literature related to reflective theory and practices in general, as well as how they apply to teaching. It begins with an historical look at the theoretical framework for reflective thinking and practice beginning with highlighting some of the Greek and Roman philosophers, as well as several educators prior to the twentieth century, with contributions to reflective theory and practice. This chapter then continues in a chronological format digging deeper into the reflective practice beliefs of modern educational research pioneers such as John Dewey and Donald Schön. The chapter concludes with some of the most current best practices concerning reflective thinking from the past twenty years.

Theoretical Framework

Reflective practice is a higher order cognitive self-inquiry process in which one asks herself "why did this happen?" or "why did I react that way?" concerning experiences in her life (Jones, 2012; Madhuri, Kantamreddi, & Goteti, 2012; Pena & Almaguer, 2012). Reflective thinking was introduced by the Greek and Roman philosophers. Though the preceding philosophers may have possessed different philosophies concerning education as a whole, there is a common thread that runs through the philosophies in varying degrees: the importance of humans being able to think and self-reflect about academic, social and political issues to arrive at the best possible solutions.

Greek and Roman Influences

Socrates (469-399 B.C.), a Greek philosopher, believed "that knowledge comes from within each person's mind" (Gutek, 2005, p. 35). This quotation highlights the

importance of realizing one's own thinking and questioning abilities, which is known today as metacognition. Socrates believed that it was the teacher's responsibility to reach into the students' minds, encouraging them to question, as well as to think reflectively and critically (Denton, 2011; Drake, 1967; Gutek, 2005).

Aristotle (384-322 B.C.), similar to Socrates, supported the idea of teaching students to think critically and reflectively in order to identify and understand the heart of an issue (Dupuis, 1985). Aristotle supplemented this belief by teaching his students that they should look at issues reflectively and critically with their senses, as well as with their minds (Dupuis, 1985; Gutek, 2005).

Conversely, from the teachings of Isocrates (436-338 B.C.), the Roman educational system placed an emphasis on rhetoric, which is the art of public speaking and straight memorization of knowledge as determined by the teacher (Dupuis, 1985. The Roman view of education was in opposition to that of the Greek view of education where self-reflection was encouraged from the students.

Middle Ages and Renaissance Influences

St. Augustine (354-430), Bishop of Hippo, was a student of rhetoric education, but he also believed that learning should be reflective in one's thinking, particularly through the study of the arts, which he thought to be an essential component of any student's education (Gutek, 2005). Dupuis (1985) wrote that St. Augustine believed "that the whole person – intellect, emotions, and attitudes – should be involved in the learning process" (p. 70); all three are facets of the reflective thinking process. However, his efforts seemed to have gone unnoticed until towards the end of the Middle Ages when Thomas Aquinas (1225-1274), a Dominican scholar, was able to merge many of the

tenants of the educational traditions of the early Greek and Roman philosophers. Aquinas believed that people were to "formulate plans and actions to improve life" (Gutek, 2005, p. 87); this idea of actively and reflectively thinking about an event or issue, combined with involving the whole person in the learning process established the foundation for what is known as reflective thinking today.

With the beginning of the Renaissance period came a shift in educational focus to a more humanistic orientation (Dupuis, 1985; Gutek, 2005), meaning that education began to focus on the student as a whole: intellectually, emotionally, physically and socially. This humanistic approach to education differed from the educational basics of teaching logic, rhetoric and grammar memorization of the Middle Ages in that the student was considered, not just the educational content being taught (Gutek, 2005). Erasmus (1466-1536), one of the leading humanists of this time, was a proponent of memorization, but also believed that it was important for teachers to engage their students in reflective, stimulating, intellectual discussions within the content of the academics that were being studied (Gutek, 2005).

Johann Comenius (1592-1670), an educator between the Renaissance and Enlightenment periods, was one of the forerunners in school reform. He believed in student-centered learning (Kliebard, 1992) and that students learned best by observing things on their own, in their own time, based on their own timetable, which was dependent on their own level of curiosity about an issue or interest. He advocated for grouping students by interest, what is now known as cooperative or collaborative learning, where students work in groups to discuss and question what they are learning with their peers (Gutek, 2005). Cooperative or collaborative learning is a type of

reflective thinking in which students are able to critically question and probe into an issue or interest with their peers (Sumison & Patterson, 2004).

It is through the development of the philosophies of the Middle Ages and Renaissance periods of history that education began to transform to view students as an important aspect of the learning process. Educators began to utilize a new lens that evaluated the need to think about and question what is being learned.

The Enlightenment Influences

With the beginning of the era in history known as *The Enlightenment*, came a new focus on what was important in education, with nature as the basis for how to live and understand things in life. John Locke (1632-1704), one of the philosophic forerunners during The Enlightenment period, wrote in 1689, in *An Essay Concerning Human Understanding*, Book II, Chapter XIX, "When the mind turns its view inwards upon itself, and contemplates its own actions, thinking is the first that occurs" (Locke in Winkler, 2010, p. 90). In other words, people think reflectively about what occurs by looking into their own minds to draw from experiences in order to develop solutions and increase knowledge. Locke believed that ideas came from two sources: experience, which is gained from the senses, and metacognition, which is reflecting on that which comes from within the mind (Drake, 1967), which are two facets of the reflective thinking process.

Jean-Jacques Rousseau (1712-1778) believed, like other philosophers of The Enlightenment period, that all questions could be answered through the observation of nature. He alleged, like Comenius, that students would learn when they were ready to learn and not any earlier (Dupuis, 1985). Rousseau also maintained that through the

process of metacognition the student is self-assessing their "abilities and resources for the completion of a learning endeavor" (Denton, 2011, p. 844), which is the heart of reflective thinking.   Metacognition is the cornerstone of becoming a reflective thinker. When preservice teachers become reflective in their thinking, they are able to recognize their own thinking, reasoning and decision-making process, which is demonstrating metacognition.

Educators, such as John Basedow (1724-1790) and Johann Heinrich Pestalozzi (1746-1827), further developed the process of metacognition and reflective thinking. They determined that metacognition is not just a form of self-assessing and thinking for learning, but a cognitive process of self-assessment that moves from simple to complex (Drake, 1967; Dupuis, 1985, Gutek, 2005) by questioning and assessing one's own thinking. This belief caused a major shift in teaching, resulting in a focus on students learning through experiences that included the senses, emotions and intellectual interest (Dupuis, 1985; Gutek, 2005).

The philosophers during the period of history known as *The Enlightenment* furthered the student as a learner philosophy of the Middle Ages and Renaissance periods by determining that students learn through the process of metacognition as well as experiences that incorporate their emotions, intellect and senses. This idea forms the foundation for the process of reflective thinking.

Modernism Influences

Dewey. John Dewey (1859-1952), one of the most prominent educational philosophers of the twentieth century, was a strong proponent of the belief that knowledge increases through inquiry and experience (Drake, 1967, Dupuis, 1985).

Dewey believed that teachers needed to be continually involved in the process of asking "why?", which leads to active problem-solving and self-reflection. Dewey, in his book, *How We Think* (1933), discussed his belief that by critically reflecting on what occurred during the school day, teachers are able to adjust the curriculum to match students' interests and thus increase learning.

Dewey realized that not only was the American culture in need of drastic change, but the educational system of that day was, too. He, thus, outlined the benefits of reflective thinking for teachers, as well as students, in his book. In *How We Think* (1933), Dewey challenged teachers to critically evaluate and reflect on their own personal beliefs, values, and actions towards teaching and students by being open-minded, whole-hearted, responsible, and reflective in their thinking, as well as through teaching active problem-solving techniques to their students.

According to Dewey (1933), in order to facilitate change through reflective thinking, teachers should exhibit the attitude of open-mindedness which "includes an active desire to listen to more sides than one; to give heed to facts from whatever source they come; to give full attention to alternative possibilities; to recognize the possibility of error even in the beliefs that are dearest to us" (p. 30). Dewey also believed that teachers need to be whole-heartedly committed to the profession of education so that they are able to think reflectively about daily situations in the classroom as well as in guiding their students in reflective, problem-solving techniques that will far exceed the four walls of the classroom. Dewey (1933) believed that teachers need to be able to think responsibly and reflectively through academic, as well as personal, issues and situations in order to guide their students to increased learning and improved decision-making.

Many times, situations in the teaching environment arise in which the pre-determined, prescribed response to that particular situation will not relate. These situations are problematic in the sense that the teachers may not have experience on how to handle this particular situation, so the teacher must consciously think about the varying possibilities before reacting. Though this process is instantaneous, Dewey outlined five phases of reflective thought for this reflective process: *suggestion, intellectualizing, hypothesizing, reasoning*, and *testing* (1933). These phases do not have established parameters, but may be expanded or condensed based on the situation and the teacher's past experiences.

In the *suggestion* phase, the teacher realizes that the pre-determined response will not be the most beneficial choice in that situation and begins to think of various alternative options. Once an option is chosen, the teacher moves into the *intellectualizing* phase of the reflective process. In this phase, the teacher decides if, based on previous experiences and knowledge, the chosen option might be a viable solution. Once the option has been thought through intellectually, the teacher forms a hypothesis, which is the third phase of reflective thinking. In this phase, the teacher makes an educated guess, the hypothesis, of what will happen if that option is chosen.

Through observing the whole environment surrounding the situation, and taking into account the hypothesis, the teacher then proceeds into the *reasoning* phase of reflective thinking. During this phase, the teacher thinks through the possible outcomes based on the hypothesis and decides to proceed with that option or, in some instances, decides that that particular choice would not be best which leads to the formulation of a new hypothesis. Once the teacher chooses an option and executes it, the teacher has

entered what Dewey (1933) calls the *testing* phase. In this phase, the teacher implements

the option and discovers if the option is successful or not. It is in this testing phase that

the teacher is able to self-reflect on the whole process, including the solution, to

determine if the option chosen was the best possible solution for the situation.

Although it would be almost fifty years before Dewey's (1933) concepts on

reflective thinking would be recognized by the education world, the framework for

teachers thinking reflectively was born. The idea of reflective thinking for educators has

been refined and, in some instances, re-named; however, Dewey's basic components of

open-mindedness, whole-heartedness, responsibility and reflective thinking are still the

basis for the reflective process within the educational realm.

Schön. Reflective thinking was brought to light in the early 1980's when Dr.

Donald Schön wrote *The Reflective Practitioner* (1983). When writing this book, Dr.

Schön's goal was to bridge "the relationship between the kinds of knowledge honored in

academia and the kinds of competence valued in professional practice" (p. vii). Schön,

relying on the knowledge he had gained while researching his doctoral dissertation on the

theory of inquiry, realized that the missing link between the theories philosophers, such

as Socrates and Aristotle, were teaching and the practices taught by Dewey was

reflection, which he determined to be comprised of four levels: *knowledge-in-practice,*

reflection-in-practice, reflection-in-action, and *reflection-on-action.*

In education, there are many times that teachers repetitively encounter similar

situations within their classrooms, such as students not listening to instructions or talking

out of turn. In some university teacher preparation programs, part of the educational

instruction that preservice teachers receive is learning and practicing a pre-determined set

of responses to these types of situations. When certain situations occur within a classroom to which teachers respond with one of the pre-determined techniques that they learned in their teacher education program, Schön (1983; 1987) identifies this as the *knowledge-in-practice* stage. Since there are no surprises in these instances, the teacher does not have to think about how to respond, as it is automatic, based on prior experiences involving that situation. Although this can be effective, by continually responding to situations with knowledge-in-practice reactions, teachers "may miss important opportunities to think about" (Schön, 1983, p. 61) that particular situation. Staying in the *knowledge-in-practice* level can lead teachers to become bored or not consider the context that affects a given situation, thus affecting student achievement by decreasing the teacher's ability to effectively provide a positive learning environment.

Reflection-in-practice (Schön, 1983; 1987) is the step teachers take when they realize that they are not moving beyond the knowledge-in-practice level. This level is typically focused on why the routine knowledge-in-practice response did not work effectively in a particular situation. When teachers are in this level, they are able to recognize that their response to a situation was not effective, and there needs to be a change made. Reflection-in-practice can take place either during the situation or in quiet retrospect at a later time, but occurs only in regards to that particular situation (Schön, 1983; 1987).

There are times during the day when student responses to situations require teachers to take a moment to think through various possibilities before responding to the situation; in other words, the teachers must think "on their feet". Schön (1983; 1987) called moments when this type of response is necessary *reflection-in-action*. When a

situation occurs in the classroom, effective teachers take time to reflect on the possible outcomes in order to decide what would be the best response instead of reacting with the routine knowledge-in-practice response.   By taking time to self-reflect on the situation immediately, teachers are able to pull from their prior experiences, knowledge and other similar situations when weighing the possibilities.

Reflection-on-action (Schön, 1983; 1987) is similar to reflection-in-action in that teachers are reflecting on a situation to discover the best possible solution. The difference is that reflection-on-action takes place after the event has happened. In this stage, teachers make time later in the day to reflect on their choices, learning from the interactions and experiences with their students. Reflection-on-action may entail changes to be made concerning how a particular situation was handled.

By using the framework established by John Dewey (1933), Schön (1983; 1987) identified and defined effective reflective practices which the educational profession eagerly adopted because of the positive impact on student achievement and learning. The information concerning the reflective thinking process and practices established by these two researchers, as well as philosophers of the past, continues to be the foundation from which teachers grow professionally in order to create a more effective learning environment and increase student achievement through best practices.

Related Literature

This section of chapter two discusses the literature that is related to reflective thinking. The theoretical framework for reflective thinking, which was discussed in the preceding pages, determined that the reflective process has its roots in the philosophies of the ancient Greek philosopher, Socrates. His belief that every person's mind is full of

knowledge that can be accessed through critical and reflective self-questioning became

one of the cornerstones for the theory of metacognition. It is this cornerstone of

reflective thinking that can assist teachers in becoming more effective in the education

profession, as well as positively impacting student achievement.

Reflective Thinking Defined

Although the general concept of reflective thinking as a means of determining the

best solution to an issue or problem began with the ancient Greek philosophers, it was

John Dewey who expanded this concept and who is considered to be the father of

reflective thinking (Hatton & Smith, 1995). Dewey (1933) defined reflective thinking as

an "active, persistent, and careful consideration of any belief or supposed form of

knowledge in light of the grounds that support it and the further conclusions to which it

tends" (p. 9). This means that when an event or issue arises, the thought process becomes

one that is focused on the best possible solution in light of the surrounding circumstances.

In terms of the educational realm, this definition was further refined by Dr. Linda Valli

(1997) in her article discussing reflection in teacher education in the United States. She

defined reflective thinking as the ability of teachers to "…look back on events; make

judgments about them; and alter their teaching behaviors in light of craft, research, and

ethical knowledge" (p. 70). Farrell (2004) in his book, *Reflective Practice in Action*,

described reflective thinking as being able to analyze one's own teaching beliefs, as well

as actions, in order to accept responsibility for what occurs in the classroom. Collin,

Karsenti, & Komis (2013) determined, after reviewing current research, that reflective

thinking is "a process concerning a particular object and in view of achieving a particular

goal or rationale" (p. 105). These researchers added that reflective thinking should be

"grounded" (p. 106) meaning that reflection is a skill that develops from practice and experience. They also believe that reflective thinking should be "generic" (p. 106), meaning that reflection takes place in the professional and social areas of life.

Though there is no established, precise definition of reflective thinking (Calderhead, 1989; Collin, Karsenti, & Komis, 2013; Hattan & Smith, 1995; Hickson, 2011; Larrivee, 2008; Lee, 2008; Marcos, Sanchez, & Tillema, 2011; Thorpe, 2004) most definitions for reflective thinking share the following common elements: it is a process (Bates, Ramirez, & Drits, 2009: Bean & Stevens, 2002; Davis, 2006; Freese, 2006; Griffin, 2003; Lee, 2008; Mahlios, Engstrom, Soroka & Shaw, 2008; Marcos, Sanchez, & Tillema, 2011; Nagle, 2008; Norsworthy, 2009; Ostorga & Estrada, 2009; Pihlaja & Hoist, 2011; Thorsen & DeVore, 2013), it is a skill that needs to be taught (Francis, 1995; Francis, Tyson, & Wilder, 1999; Mulnix, 2012; Nagle, 2008; Russell, 2005; Silcock, 1994; Stanley, 1998), it entails a decision being made (Boyd, Boll, Brawner, & Villaume, 1998; Day, 1993; Ewart & Straw, 2005; Giovannelli, 2003; Larrivee, 2000, 2008; Ostorga & Estrada, 2009; Pihlaja & Hoist, 2011; Rosen, 2008; van Manen, 1977), and it can positively impact student achievement (Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009). In consideration of these common threads, that are elements of reflective thinking, it is important for preservice teachers to understand how reflective thinking, as well as the reflective process, impacts their effectiveness as future teachers.

Impacts on the Preservice Teacher

Preservice teachers must realize that reflective thinking is not just describing the day's events in a narrative form where the focus is on simply surviving the day (Davis, 2006; Francis, 1995; Havevik, Aydeniz, & Rowell, 2012; Hoover, 1994; Ward & McCotter, 2004). In contrast, reflective thinking is an intentional, self-reflective process on teaching practices that positively impacts student achievement (Ostorga & Estrada, 2009; Silcock, 1994). Becoming a reflective thinker is not an easy task (Lorson, Goodway, & Hovatter, 2007; Nagle, 2008; Postlethwaite & Haggarty, 2012; Pultorak, 1993). It is a skill that must be taught (Francis, 1995; Francis, Tyson, & Wilder, 1999; Jay & Johnson, 2002; Nagle, 2008; Russell, 2005) and a process that the teacher education programs should be scaffolding through explicit instruction and modeling for their preservice teachers in order to prepare them for the teaching profession (Bean & Stevens, 2002).

Preservice teachers need to realize that in their teaching profession they will be "confronted continually with situations wherein they must make practical decisions" (van Manen, 1977, p. 206). Therefore, when an event or issue arises, the preservice teachers need to realize that there is no prescribed checklist of how to respond (Larrivee, 2000; Mayes, 2001); they need to be able to determine an appropriate solution for that event or issue, which entails the process of reflective thinking. In order for preservice teachers to comprehend this process of reflective thinking, they need to receive guidance from the teacher preparation programs regarding the concepts associated with reflective thinking (Collier, 1999; Lee, 2005; Lee, 2008, Russell, 2005; Thorpe, 2004) through involvements

such as journal writing, internship experiences, and constructive critical feedback from their supervisors and mentor teachers.

Journal Writing

Reflective thinking has become a part of most teacher preparation programs in order to prepare preservice teachers to be reflective thinkers (American Association of Colleges for Teacher Education, 2010; National Board of Professional Teaching Standards, 2007: National Council for Accreditation of Teacher Education, 2008). Journal writing in the internship experience is an accepted and effective way that preservice teachers can reflect on their day and thus practice the skill of reflective thinking (Otienoh, 2009). Journal writing also provides a way for the preservice teachers to revisit their journal entries to look back and reflect on their growth over time (Lee, 2008) so that they can learn from their own experiences in the classroom.

Though journal writing is an accepted means of critically reflecting within the education profession (Otienoh, 2009), preservice teachers have a tendency to write in a narrative format and focus on themselves and the "routineness" in their internship (Francis, 1995; Gipe & Richards, 1992; Hoover, 1994; Seng, 2001; Valli, 1997). In this instance, "routineness" means discussing such issues as concerns about keeping students on task, time management, frequent interruptions, and classroom behaviors that interfere with meeting lesson objectives (Collier, 1999; Francis, Tyson, & Wilder, 1999; Gitlin, Barlow, Burbank, Kauchak, & Stevens, 1999; Hoover, 1994; Jay & Johnson, 2002; Pihlaja & Holst, 2011; Stanley, 1998; Sutherland, Howard & Markauskaite, 2010). Instead of simply focusing on such mundane issues and processes, Farrell (2004) suggests that preservice teachers use journals to write about their experiences in such as a

way to "record criticisms, doubts, frustrations, questions, the joys of teaching, and the results of experiments" (p. 39). However, preservice teachers should be instructed on what is to be expected in their reflective journals (Francis, Tyson & Wilder, 1999; Thompson & Pascal, 2012; Thorpe, 2004) and parameters should be established to ensure that reflections move beyond simple descriptions of the daily routines, otherwise journal writing may prove to be ineffective as a tool for guiding preservice teachers to be more critical in their reflective thinking (Bell, Kelton, McDonagh, Mladenovic, & Morrison, 2012; Hoover, 1994) .

Though it does take more time and effort to reflectively write in journals (as compared to more routine writing), the end result is that the journal writing becomes an active process (Hoover, 1994; Thompson & Pascal, 2012) that can promote more reflective thinking (Griffin, 2003) and lead to more effective teaching (Bruster & Peterson, 2012; Thompson & Pascal, 2012; Thorpe, 2004). When preservice teachers are given explicit guidance in writing reflectively in their journals, coupled with their internship experience, they will begin to understand how thinking more reflectively will make them better and more effective teachers (Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009).

Internship Experiences

The internship is the place where the preservice teachers attain real-life experiences concerning the ins and outs of the daily school environment. It is the place where preservice teachers are able to merge what they have learned in their university coursework (theory) with actual teaching (practice) (Griffin, 2003; Nagle, 2009). In

order to best facilitate this convergence of knowledge and formation of reflective thinking skills, the internship placement needs to be in a school environment that will provide varied experiences for, as well as work closely with, the preservice teachers' university (Clarke, Lodge, & Shevlin, 2012; Korthagen, 2010; Zeichner, 2010). This placement is crucial to the preservice teachers' growth as it provides a safe haven for them to learn, as well as practice, the necessary skills to be a reflective thinker with the guidance and support of an experienced mentor teacher (Albina, 2012; Koc, 2011).

During the internship experience, the preservice teacher should observe the experienced mentor teacher not only teaching, but handling the various situations that occur throughout the day (Barab & Hay, 2001; Hudson & Skamp, 2002; Koc, 2011). It is important that the preservice teachers discuss both the teaching and situational aspects that have occurred during the day with their mentor teacher because this is where they are able to determine the importance of being a reflective thinker (Collin, Karsenti, & Komis, 2013) by witnessing and discussing the blending of theory and practice.

Positive internship placements provide a variety of experiences for preservice teachers to encounter and upon which to reflect. The internship experience is the place where the preservice teacher is able to incorporate practical academic pedagogical techniques into a "real world" educational setting under the guidance of an experienced mentor teacher. Because this experience is so integral to growing as a teacher, preservice teachers need a support system that includes the experienced mentor teacher and their supervisor from their teacher preparation program (Koc, 2011).

Support Systems

It is imperative for the preservice teachers' growth that they have the support of effective and positive experienced mentor teachers as preservice teachers tend to teach in ways in which they were taught (Britzman, 2003; Hollingsworth, 1989; Lynch, McNamara, & Seery, 2012). As the preservice teachers slowly begin to assume some of their mentor teacher's responsibilities, the mentor teacher needs to model the reflective thinking process with the preservice teachers by discussing with them what occurred during specific time periods of teaching or handling of an event or issue (Barab & Hay, 2001; Hourani, 2013; Hudson & Skamp, 2002; Koc, 2011, Walkington, 2005). By taking time to give the preservice teachers feedback and critically reflect with them, the experienced mentor teacher is supporting and encouraging growth as a reflective teacher (Hourani, 2013; Koc, 2011; Malderez, Hobson, Tracey, & Kerr, 2007; Roe, Smith, & Ross, 2010; Rots, Aelterman, Devos, & Vlerick, 2010; Timmerman, 2009).

Not only do preservice teachers observe and duplicate the way their mentor teachers teach; they also observe and duplicate the way their educational supervisors teach (Cheng, Cheng, & Tang, 2010; Struyven, Dochy, & Jannssens, 2010). This supervisor is responsible for keeping track of the preservice teacher's progress throughout the length of that internship. The supervisor observes the preservice teacher in the classroom (Cheng, Cheng, & Tang, 2010; Struyven, Dochy, & Jannssens, 2010), and is instrumental in guiding and supporting the preservice teacher as they grow to become a more reflective thinker (Bates, Ramirez, & Drits, 2009; Malderez, Hobson, Tracey, & Kerr, 2007; Rots, Aelterman, Devos, & Vlerick, 2010). This guidance can

occur through individual discussions, group discussions and/or commenting on their journal writing.

A study by Seng (2001) determined that supervisors did not necessarily influence preservice teachers' reflective thinking but that supervisors could be instrumental in encouraging reflection in preservice teachers' journal writings. However, other researchers have found that it is through the journals that supervisors can guide preservice teachers to become more reflective in their thinking (Hoover, 1994; Thorpe, 2004). As supervisors read through preservice teachers' journal writings, they can make specific comments, ask questions, and refer the preservice teachers back to another situation or event in the journal to point out growth. By providing these types of specific, constructive feedback to the preservice teachers, the supervisors are encouraging them to be more critically reflective in their writings (Thorpe, 2004).

In order for reflective thinking to become an important part of the day to preservice teachers, it is a process that must be experienced and supported by their experienced mentor teachers and supervisors within the parameters of the internship experience. It is through the combined efforts, encouragement, and guidance of the experienced mentor teachers, supervisors, internship experience and journal writing that forms a system of support for preservice teachers so that they will gradually begin to understand the importance of the reflective thinking process and becoming a critically reflective teacher.

Process of Reflective Thinking

As first believed by philosophers from the past, reflective thinking is a metacognitive process in which there is a cognizance of what is being thought or done

(Marcos, Miguel, & Tillema, 2009; Mulnix, 2012; Pihlaja & Holst, 2011). Reflective thinking is a process that, according to Norsworthy (2012), "preservice teachers need to experience" (p. 107) so that they can begin to bridge practice and theory (Brookfield, 1995; Calderhead, 1989; Gadsby & Cronin, 2012; Marcos, Miguel, & Tillema, 2009; Silcock, 1994; Thompson & Pascal, 2011; Thompson & Thompson, 2008; Ulmer & Timothy, 2001). As noted and discussed by numerous researchers, when teachers are able to blend theory and practice in a reflective way, there is a positive impact on student achievement (Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009).

Preservice teachers need to realize that reflective thinking is more than just a routine response to a situation based on a set of prescribed skills (Mayes, 2001); rather, it is the ability to critically think and reflect on a situation to arrive at the best possible solution for that situation. However, for most preservice teachers, reflecting means simply writing a narrative description of the events that happened during the day while at their internship (Hickson, 2011; Lorson, Goodway, & Hovatter, 2007; Romano, 2005; Stanley, 1998). Collier (1999) found that "descriptive and technical reflections are common for the majority of student teachers" (p.179). These descriptive and technical types of reflections of preservice teachers at this level focus on issues such as keeping students on task, time management, frequent interruptions, and classroom behaviors that interfere with learning (Collier, 1999; Francis, Tyson, & Wilder, 1999; Gitlin, Barlow, Burbank, Kauchak, & Stevens, 1999; Hoover, 1994; Jay & Johnson, 2002; Pihlaja & Holst, 2011; Stanley, 1998; Sutherland, Howard & Markauskaite, 2010).

In order to become more effective teachers, the preservice teachers need to be taught the skill of reflective thinking (Francis, 1995; Francis, Tyson, & Wilder, 1999; Mulnix, 2012; Nagle, 2008; Russell, 2005; Silcock, 1994; Stanley, 1998), and how to turn their focus on reflecting on their own teaching practices, instead of these technical aspects of the classroom environment. By turning this focus to the students as learners, preservice teachers will begin to reflect more critically, which leads to the use of best practices for improving student achievement (Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009).

The process of becoming a reflectively thinking teacher in order to determine best practices and ultimately increase student achievement is one that many researchers determined progresses in stages or levels (Collier, 1999; Hickson, 2011; Jay & Johnson, 2002; Larrivee, 2000, 2008; Lee, 2005; Pultorak, 1996; Rodgers, 2002; Stanley, 1998; Taggart, & Wilson, 1998; Thorsen & DeVore, 2013; Ulmer & Timothy, 2001; Ward & McCotter, 2004). This progression begins at a more technical level where the preservice teacher performs routinely with little to no deviation from what was taught or observed in regard to handling a specific situation; it is that automatic response to an event or situation that is based solely on past experiences and what has been taught (Brooksfield, 1995). Once preservice teachers are taught the basics of the reflective thinking process, they will progress to become critically reflective thinkers who are able to identify and assess personal experience and connect it to prior knowledge in order to identify the best possible outcome for particular issues (Brooksfield, 1995; Gadsby & Cronin, 2012).

This progression through stages or levels of reflective learning has been explored by many educators and philosophers over the past century. Though none of these researchers' stages or levels are exactly the same, there are common threads that weave all of them together to form a complete picture for the process of progressing through reflective thinking skills.

Table 2.1 identifies various researchers' levels of the reflective process.   Though the researchers utilized slightly different terminology, all of the levels in Table 2.1 can be grouped basically into three well-defined levels.

Table 2.1

Historical Comparison of Reflective Thinking Levels

Author	Year	Terminology	Description of the level
Dewey	1933	Suggestion	Spontaneous thinking of a solution
		Intellectualizing	Realizing the solution may not be simple so need to look at other solutions
		Hypothesizing	Choosing a solution to try
		Reasoning	Mentally elaborating on the solution
		Testing	Trying the solution to see if it works
Van Manen	1977	Deliberative rationality	Application of knowledge and skills for a specific end
		Practical application-contextual	Analyzing and clarifying experiences for making practical choices
		Critical reflection-dialectical knowledge	Questioning the worthiness and relevance of particular

Table 2.1

Historical Comparison of Reflective Thinking Levels (continued)

Author	Year	Terminology	Description of the level
Schön	1983 1987	Knowledge-in-practice	Responding automatically to situations based only on experiences
		Reflection-in-practice	Realization that their response was not effective and needs to be changed
		Reflection-in-action	Thinking through possible solutions as the event occurs
		Reflection-on-action	Thinking through the chosen solution or action after the event has occurred
Hatton and Smith	1995	Descriptive information	Just describing the event
		Descriptive reflection	Describing the event with reasoning based on experience
		Dialogic reflection	Describing an event mentioning differing viewpoints and thoughts
		Critical reflection	More than one solution is described based on broader reasoning
Lison and Zeichner	1996	Rapid reaction	The immediate response to an event
		Repair	Pausing to think about what happened
		Review	Taking time to think about the situation
		Research	Researching the possible Solutions
		Retheorize and research	Rethinking the solution in light of what was discovered in the research
Jay and Johnson	2002	Descriptive	Describing the event
		Comparative	Compares the event to other viewpoints
		Critical	Looking at own perspective with others to form the best perspective

Table 2.1

Historical Comparison of Reflective Thinking Levels (continued)

Author	Year	Terminology	Description of the level
Lee	2005	Recall	Describing an event based on personal background knowledge
		Rationalization	Searching for relationships between experiences
		Reflectivity	Analyzing an issue to seek to change or improve
Larrivee	2008	Pre-reflection	Responding to situations automatically without thinking of alternatives
		Surface reflection	Focus is on strategies to reach a particular goal
		Pedagogical reflection	Applying educational knowledge to determine a basis for practice
		Critical reflection	Examining the moral and ʻ ethical consequences of educational choices

The first level of the reflective thinking process is where the focus is on the

routine aspects of teaching (Bruster & Peterson, 2012; Dewey, 1933; Francis, Tyson, &

Wilder, 1999; Griffin, 2003; Hatton & Smith, 1995; Jay & Johnson, 2002; Larrivee,

2008; Lee, 2005; Pihlaja & Holst, 2011; Schön, 1983/1987; van Manen, 1977; Ward &

McCotter, 2004; Zeichner & Liston, 1996). The preservice teacher is focused mainly on

classroom management, particularly misbehaviors, and teaching the content. During this

level, the preservice teacher may experience some conflict about teaching and students,

but instead of analyzing why there is a conflict, he/she will simply temporarily respond

automatically without any thinking about the situation. Many decisions and actions that

preservice teachers make at this level are reactions to the situations based on their own personal experiences or what they have learned in coursework.

The second level of the reflective thinking process is where theory and practice are bridged. In this level, preservice teachers are beginning to understand why and what they are teaching, as well as why they react to certain situations in the manner that they do (Bruster & Peterson, 2012; Dewey, 1933; Hatton & Smith, 1995; Jay & Johnson, 2002; Larrivee, 2008; Lee, 2005; Schön, 1983/1987; van Manen, 1977; Ward & McCotter, 2004; Zeichner & Liston, 1996). The preservice teachers are able to recognize that many times a situation is not as simple as it seems and that it requires them to think through (problem solve) the possible solutions prior to making a decision (Dewey, 1933; Marcos, Sanchez & Tillema, 2011). At this level of reflection, preservice teachers are able to recognize when they are reacting automatically without thinking about the situation and when they need to be willing to try another option if the technical responses are not working (Jay & Johnson, 2002; Schön, 1983/1987) and have a variety of theories in which they are able to refer in order to determine the best possible solution.

The last level of the reflective thinking process is where purposes for teaching are fused. During this level, preservice teachers are not only aware of their actions, but they have the research and experience to validate those actions (Bruster & Peterson, 2012; Dewey, 1933; Hatton & Smith, 1995; Jay & Johnson, 2002; Larrivee, 2008; Lee, 2005; Schön, 1983/1987; van Manen, 1977; Ward & McCotter, 2004; Zeichner & Liston, 1996). They are able to understand why they are teaching in a particular way, which is based on their personal research into best practices. At this level, preservice teachers are willing to analyze their own teaching practices in order to promote student learning

(Boyd, Boll, Brawner, & Villaume, 1998; Ewart & Straw; 2005; Gipe & Richards, 1992; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada, 2009). This is the critically reflective level in which theory and practice are fused into one so that there is improved student achievement using best practices.

Summary

Being a critically and reflectively thinking teacher means incorporating metacognition in order to inquire about an event or an issue, review the possibilities and choose the best solution for that event or issue. Once preservice teachers become more reflective in their thinking, they are better able to handle the various situations that occur in their classrooms.

Whatever terminology is used, research has shown that becoming a reflective thinker is a skill that must be taught (Bates, Ramirez, & Drits, 2009: Bean & Stevens, 2002; Boyd, Boll, Brawner, & Villaume, 1998; Collier, 1999; Day, 1993; Francis, 1995; Davis, 2006; Francis, Tyson, & Wilder, 1999; Freese, 1999, 2006; Gitlin, Barlow, Burbank, Kauchak, & Stevens, 1999; Griffin, 2003; Hattan & Smith, 1995; Jay & Johnson, 2002; Lee, 2008; Mahlios, Engstrom, Soroka & Shaw, 2008; Marcos, Sanchez, & Tillema, 2011; Nagle, 2008; Norsworthy, 2009; Ostorga & Estrada, 2009; Pihlaja & Hoist, 2011; Pultorak, 1996; Rhine & Bryant, 2007; Russell, 2005; Schön, 1987; Thorsen & DeVore, 2013; Valli, 1997). It is a skill that is beneficial to preservice teachers because it guides them to bridge the gap between theory and practice, and leads them to be more effective as teachers.   Reflective thinking is a process that moves along a continuum from routine to critical self-efficacy. Though most preservice teachers start their internship experiences thinking on the routine level, with support and guidance from

their mentor teacher and teacher preparation programs, they are able to move to a more reflective level over time.

      This research project analyzes the changes in process of reflective thinking in preservice teachers during a twelve week time frame. The methodology for this dissertation research study is described in the next chapter.

CHAPTER 3: METHODOLOGY

This chapter of the dissertation explains the methodology used for the study. The research study, which was quasi-experimental, entailed evaluating forty-seven preservice teachers' written reflections; one from week two at the beginning of the semester (pre-intervention) and one from week twelve near the end of the semester (post-intervention) to determine if there was any change in reflective levels based on the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B). This chapter of the dissertation also describes the specific training for the supervisors who evaluated the preservice teachers' reflections, as well as the four lessons implemented during the large group seminars for the explicit instruction on reflective thinking. The chapter closes with a discussion of how the data was gathered and how it was analyzed utilizing the Wilcoxon Signed Rank test and the Spearman Rho Correlational analysis.

Design of the Study

This dissertation research study utilized a quasi-experimental approach in that there is only one control group of participants and all participants completed the pre-intervention and post-intervention written reflective thinking survey. This approach was chosen instead of the randomized experimental research approach because the research participants were all part of the same group, not randomly assigned to a group (Thyer, 2012).

For this research study, the preservice teachers were allowed to choose a number (1-47) with which they wanted their name associated; it was not randomly assigned to them. These numbers were used to link the pre-intervention and post-intervention surveys

in lieu of using students' names so that anonymity was maintained when the trained supervisors scored the written reflections. All of the preservice teachers submitted and scored their written reflections from weeks two and twelve. Each number (1-47) was randomly assigned to one of three trained supervisors for them to evaluate the reflections utilizing the same assessment instrument the preservice teachers used. During the ten weeks between the pre-intervention and post-intervention, the participants received explicit instruction on reflective thinking and practices in four large group seminars.

Question and Hypothesis

Research Question

This research study attempted to answer the following research question:

1. Will first-semester preservice teachers' written reflections demonstrate growth in reflective thinking after receiving explicit instruction concerning reflective thinking and practices?

In order to answer this question, this research study was conducted with first semester preservice teachers at a university in south Florida. One of the requirements for these students during this course was to maintain and submit weekly written reflections online through the university's electronic Blackboard system in which they were given little guidance in writing and discussing their internship experiences (Appendix A).

Over the course of ten weeks, the preservice teachers received explicit instruction in reflective practices during their large group seminar meetings. To determine if growth occurred during the semester, the preservice teachers brought a copy of their week two and week twelve reflections to analyze and score based on an adaptation of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for*

Facilitators and Self Assessment (Larrivee, 2008) (Appendix B). Using this same survey, three university supervisors also analyzed and scored the preservice teachers' written reflections. The supervisors received training regarding soring the reflections prior to the beginning of the semester. Because the data collected was nonparametric, the scores from the three supervisors were analyzed using the Wilcoxon Signed Rank statistical formula to determine if, after receiving explicit instruction in reflective thinking and practices, the preservice teachers' written reflections from week two and week twelve demonstrated a growth in reflective thinking.

Null Hypothesis

The null hypothesis for this research study was:

1. Using the Wilcoxon's Signed Rank test on the supervisors' score analysis, there will be no statistically significant positive change in the median score of the preservice teachers' written reflections from week two (pre-intervention) to week twelve (post-intervention) after four sessions of intervention.

The null hypothesis will not be rejected if the scores from the supervisors' analysis of the preservice teachers' written reflections on their internship experiences reflect no statistically significant positive changes after the ten weeks of intervention. However, the null hypothesis will be rejected if there is a statistically significant change based on the hypothesized change of the supervisors' scoring of the preservice teachers' written reflections from the beginning of the semester to the end of the semester.

Participants

For this research study, the participants consisted of forty-seven preservice teachers enrolled in a first-semester internship program at a university in south Florida.

A demographics/experience survey was conducted during the first large group seminar (Appendix C). To validate that this group of preservice teachers was a sample representative of the national teacher population, the demographics information from the 2007-2008 National Center for Statistics Characteristics of Full-Time teachers (Indicator 17-2012) and the May, 2011, Florida Department of Education Data Report were used.

Based on the gender information from the survey, which is summarized in Table 3.1, 91.58% of these first semester preservice teachers were female while 8.5% were male. According to the 2007-2008 National Center for Statistics Characteristics of Full-Time teachers (Indicator 17-2012), 84% of all full-time elementary teachers in the nation were female while 16% were male. In Florida, the May, 2011, Florida Department of Education Data Report determined that 90.1% of the elementary teachers in the fall of 2009 were female and 9.9% of these teachers were male. The gender demographics of the preservice teachers in the research study group are slightly different from both the national and state gender demographics for elementary school teachers.

Table 3.1

Demographics of the 2009 Fall Semester Preservice Teachers

Demographic	Research study	NCES 2007-2008	Florida DOE 2008
Female	91.5	84.0	90.1
Male	8.5	16.0	9.9

Note. Numbers shown are percentages out of 100.

Table 3.2 summarizes the ethnicity demographics of this group of first-semester preservice teachers as compared to the ethnicity demographics information derived from the 2007-2008 National Center for Statistics Characteristics of Full-Time teachers (Indicator 17-2012) as well as the May, 2011, Florida Department of Education Data Report. In the African American ethnicity demographic descriptor, the ethnicity percentage of the preservice teachers in the research study is slightly higher than the national ethnicity demographics for African Americans, yet slightly higher than the percentage of African American elementary teachers in Florida. The percentage of preservice teachers in the research study who selected the classification of Asian ethnicity was higher than both the national and state percentages, while those choosing the Hispanic ethnicity classification were lower than both the national and state percentages. The percentage of preservice teachers who selected Caucasian as their ethnicity was slightly below the national percentages and above the state percentages.

Table 3.2

Ethnicity Demographics of the 2009 Fall Semester Preservice Teachers

Demographic	Research study	NCES 2007-2008	Florida DOE 2008
African American	10.6	7.0	13.7
Asian	4.3	1.0	1.0
Caucasian	80.8	83.0	73.4
Hispanic	4.3	7.0	11.6

Note. Numbers shown are percentages out of 100.

In studying the ethnicity percentages in terms of minority or non-minority, the sample group of these first semester preservice teachers is 19.2% minority which falls in between the national percentage of 15% and the state percentage of 26.3%. This indicates that this research sample is similar to both the national and the state ethnicity demographics.

Table 3.3

Other Demographics of the 2009 Fall Semester Preservice Teachers

Demographic	N	%
Age Range		
20-29	37	78.7
30-39	5	10.6
40-49	5	10.6
Substitute Teaching Experience		
No experience	41	87.2
Some experience	6	12.8
Number of Courses Taken or Taking		
1	1	2.1
2	23	48.9
3	9	19.1
4	14	29.8
Experience with Children aged 4-12		
Less than 1 year	6	12.8
1-2 years	11	23.4
3-5 years	15	31.9
6-10 years	10	21.3
Over 10 years	5	10.6

Note. N= the number of students. % = the percentage out of the total number of students

The other demographic information requested on the survey (Appendix C) is summarized in Table 3.3. This data was not compared to national and state demographics because the research study participants were not employed as elementary

teachers in a public school. The data collected was specific for these first semester College of Education students at this university to be used for additional correlational information, if applicable.

The majority of the research sample preservice teachers (78.7%) were between the ages of 20 – 29 with no substitute teaching experience (87.2%). Since this teacher preparation program encourages its preservice teachers to enroll in the first internship course in their first semester of admittance to the College of Education, it is not surprising that almost half of the research group (48.9%) had taken or were currently taking two other education courses during the same semester as their first internship course.

Setting

This research study was conducted during the fall of 2009 with a group of forty-seven preservice teachers enrolled in the first internship course in a teacher education program at a nationally and regionally accredited university. The preservice teachers were completing their thirteen weeks of internship experience in seventeen different public elementary schools located in three counties surrounding the main campus of the university. The preservice teachers interned at the schools twice a week during the schools' usual hours. These students also attended nine, two-hour long, whole group seminars on the university campus, four of which were used to instruct them on reflective thinking and practices.

Instrumentation

Demographic Survey

For this research study, a basic broad demographics survey (Appendix C) was created simply to collect general demographic information on the participants in the research study. The demographic survey asked the preservice teachers their gender, age range, ethnicity, the number of education classes they had taken or were currently taking, if they had been a substitute teacher or not, and how many years of experience they had had with elementary aged children. This was completed anonymously by each of the preservice teachers enrolled in this first semester internship course.

Survey of Reflective Practices

This dissertation research study utilized one part of the assessment survey instrument developed by Dr. Barbara Larrivee: the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (2008) (Appendix B). Dr. Larrivee was contacted and gave her permission to use and adapt the survey instrument for this dissertation (Appendix D).

According to Dr. Larrivee (2008), there are four levels of reflective thinking: pre-reflection, surface reflection, pedagogical reflection, and critical reflection.

At the pre-reflective level, preservice teachers typically will react to classroom situations automatically, relying on the standard textbook responses. They view "themselves as victims of circumstance" (Larrivee, 2008, p. 342) unable to consider any alternative possibilities to situations.

In the surface reflections level, preservice teachers are focused on the technical aspects of teaching and the "strategies and methods used to reach predetermined goals"

(p. 342). The focus in this level is finding what will work, not necessarily understanding why it works or what else might work better.

Larrivee (2008) identifies the third level as the pedagogical reflection level. In this level, preservice teachers are able to connect theory with practice and understand their own personal teaching style. They are able to "apply the field's knowledge base and current beliefs about what represents quality practices" (Larrivee, 2008, p. 343).

In the critical reflection level, which is the highest level of reflective thinking, preservice teachers are able to reflect critically on the "implications and consequences of their classroom practices on students" (Larrivee, 2008, p. 343). It is at this level of reflection that preservice teachers are able to self-reflect on their own personal beliefs, either validating or reshaping those beliefs, in order to positively impact their students' learning.

Three of the "levels" within the survey have 14 items each that correspond to that particular level, while the remaining level has 11 corresponding items, thus resulting in a total of 53 items. The items in each level were ranked with either a 0 for not being mentioned in the written reflection, a 1 for being mentioned but not discussed, or a 2 for being mentioned and discussed. If a participant did not mention any of the 53 items in their written reflection, their total score would be zero. If a participant mentioned each of the 53 items the participant would receive one point for each item and therefore their total score would equal 53. Finally, if a participant mentioned and discussed each of the 53 items, the participant would receive 2 points for each item and their total score would be 106, the highest possible score. It is possible for participants to receive any combination of points depending on the total items receiving a zero, one or two.

As preservice teachers are taught the necessary skills and strategies for thinking reflectively, in conjunction with what they are learning during their internship experience, reflective thinking is synthesized as they progress through each of these levels, which guides them to be more effective teachers when they are teaching in their own classrooms.

Cronbach's alpha

Since this survey instrument was adapted to a Likert-type scale instrument utilizing ordinal or ranked data, it was necessary to determine the reliability of the survey instrument. Gadermann, Guhn & Zumbo (2012) concluded in their study that it is beneficial to determine the reliability coefficient of ordinal data, such as "Likert-type or mixed items, with 2 to 7 response options" (p. 7). They state that using Cronbach's alpha with ordinal data "might lead to substantively deflated reliability estimates" (p. 1). Though recognized as being an underestimated reliability value, Cronbach's alpha has been widely accepted as a "quality indicator of test scores" (Sijtsma, 2009, 107) in calculating if reliability is internally consistent.

Though this research study analyzed nonparametric data, Cronbach's alpha coefficient for internal consistency reliability was chosen to determine reliability as it is the statistic most often used for reliability with Likert scales (Gliem & Gliem, 2003). Table 3.4 reports the Cronbach's alpha coefficient for each level in the survey instrument, as well as the total for internal consistency reliability. The normal coefficient range for Cronbach's alpha is between 0 and 1, with a reliability > 0.7 demonstrating acceptable internal reliability.

Table 3.4

Cronbach's alpha

Level (number of items)	Cronbach's alpha
Pre-reflection (14)	0.727
Surface reflection (11)	0.553
Pedagogical reflection (14)	0.694
Critical reflection (14)	0.627
Total (53)	0.822

Note: Reliability is acceptable > 0.7

The calculated reliability for this research study survey instrument for all 53 items in the pre-intervention was 0.822. When each section of the survey instrument was analyzed, the following reliability alpha values were determined: 0.727 for the 14 items in the pre-reflection section, 0.533 for the 11 items in the surface reflection section, 0.694 for the 14 items in the pedagogical reflection section, and 0.627 for the 14 items in the critical reflection section. In each instance, using the Cronbach's alpha measurement statistic with the realization that the reliability is possibly on the lower end of the reliability estimate since this research study uses nonparametric ordinal data, the internal consistency reliability of the survey instrument is acceptable.

Wilcoxon Signed-Rank Test

The Wilcoxon Signed-Rank Test, which is a non-parametric statistical test, was utilized to analyze the median scores of the reflections from pre-intervention and post-intervention. This test, which is equivalent to the *t*-test, was chosen for two reasons: the research study used ordinal or ranked data that did not follow a normal distribution and the study consisted of paired data collected from one group of participants who received

the same intervention and completed the same pre-intervention and post-intervention survey assessment over the course of the study.

Supervisor Training

Three university professors who had supervised preservice teachers in the past volunteered to attend a special training session to learn how to score the first-semester preservice teachers' written reflections. At this meeting, the three professors were given a copy of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* developed by Barbara Larrivee (2008) (Appendix B) and anonymous copies of the written reflections of four preservice teachers from the prior semester, numbered one through four.

During the training, the three supervisors first discussed what each item meant on the survey. They were asked to score the written reflection sample number one. After each supervisor scored the first reflection, the researcher noted each of their scores. These scores, which were similar in total points awarded, were compared and the supervisors discussed how they arrived at each score for each item. The researcher made notes on their comments and suggestions as to how they were arriving at their scores. After discussing written reflection number one, the supervisors scored written reflection number two, based on the previous discussion and suggestions given. Again, the supervisors compared and discussed their answers, making sure to clarify any discrepancies noted in scoring the reflection. The supervisors repeated this process two more times with the last two written reflections. By the end of the session, each professor was scoring the sample reflections with scores that were comparable to the other two supervisors.

Instruction Provided to the Preservice Teachers

Throughout the semester, the preservice teachers attended four, two-hour whole group seminars where they received explicit instruction concerning reflective thinking. During the first seminar the participants were allowed to choose their research study identification number of one through forty-seven. They signed their name beside the number they chose on a master list which was placed in a locked closet that was not accessible to the supervisors. To maintain confidentiality, this number became the number that the students were to use for all assignments that corresponded with reflective thinking. Also at the first meeting of the internship class, the students were asked to complete the demographics/experience survey (Appendix C) developed by this researcher. In this survey, which was anonymous, the preservice teachers answered questions concerning their gender, age, ethnicity, and teaching experience.

During the second seminar, the preservice teachers were asked to bring a hard-copy of the second week clinical experience written reflection to the whole group seminar. They were each given a copy of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Appendix B). The researcher discussed each item on the survey with the preservice teachers and answered any questions that they had about the instrument. Once each item had been discussed and clarified, the researcher asked them to analyze and score their own written reflections using the instrument. The only identifying mark given by them was the number that was chosen at the first seminar which they put on both their written reflection and the scored survey instrument.

After the written reflections and survey instruments were collected, the researcher used an eleven-page power point presentation, which had been created by this researcher, to define and discuss reflective thinking (Appendix E). This power point began with a statement from Barbara Larrivee (2006) that described the characteristics of a reflective teacher. The preservice teachers were asked to first identify two items from this statement that they would consider their strengths. They were then asked to share these two strengths with a colleague sitting next to them. The preservice teachers were then asked to list two items that they felt were areas they could improve. Again, they were asked to turn to a colleague and share these areas.

The presentation continued by providing the preservice teachers with four definitions for reflective thinking, as well as the importance of teachers becoming reflective thinkers. The last part of the presentation discussed the four lenses of critical reflection (Brookfield, 1995). Finally, the preservice teachers were divided into groups of three and given two statements to discuss within their small groups (Appendix F). After giving them a few minutes to discuss their thoughts on these two statements, the students were encouraged to report what their groups thought about each statement. At the end of the two-hour seminar, the preservice teachers were given a copy of the power point presentation which included a list of questions to use as a reference when writing their reflections.

In the third seminar, the preservice teachers were introduced through a second power point on reflective thinking (Appendix G) to four researchers' definitions of reflective thinking; Dr. Barbara Larrivee (2006), Dr. Thomas Farrell (2004), Dr. Kenneth Zeichner and Dr. Daniel Liston (1996), and Dr. John Dewey (1933). They were also

reminded of the various questions to be incorporated into their written reflections. The power point presentation continued with an adaptation of the ten attributes of a reflective teacher (Larrivee, 2006) followed by descriptions and examples of Dewey's (1933) framework of open-mindedness, whole-heartedness and responsibility. These attributes were compared to those described by Dr. Larrivee (2006).

The last part of the power point on reflective thinking discussed the types of reflection according to Schön (1983/1987) and included examples for each level of reflection. The final forty minutes of the seminar was spent presenting and discussing a brief overview and history of the five prevalent theoretical philosophies of education through a power point presentation (Appendix H). At the end of the seminar, the students were asked to refer to the theoretical philosophies and the philosophers, as well as the types of reflective practice within their reflections. The preservice teachers received a copy of this power point presentation for reference.

During the fourth seminar, the researcher prepared a third power point presentation to discuss the levels of reflective thinking (Appendix I) based on the research conducted by Dr. Barbara Larrivee (2006) and Dr. Thomas Farrell (2004). At the end of the presentation and discussion, the preservice teachers were asked to collaborate in groups of four. They were given three scenarios to evaluate and identify based on the levels of reflection from a power point presentation.   Each scenario was discussed as a whole group, with the researcher pointing out the various levels of reflection within each scenario. Again, the preservice teachers were reminded of the reflective questions to incorporate into their written reflections and they received a copy of this power point presentation for reference.

For the next to the last seminar of the semester, the students were asked to bring a hard-copy of their week twelve clinical experience written reflection. They were given a blank copy of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Appendix B) in which to evaluate their own reflection. These reflections were identified only by the number that was chosen at the beginning of the semester.

During the final seminar, the student preservice teachers were given back the forms that they had completed throughout the semester. They were encouraged to review both their pre and post responses to identify their growth over the semester.

Data Analysis

For this quasi-experimental research study, the data was analyzed using the one group pre-intervention/post-intervention design as described by several researchers (Ary, Jacobs, Razavieh & Sorensen, 2006; Gliner & Morgan, 2000; Thyer, 2012). In this quasi-experimental design, there is only one group that participates in a pre-intervention assessment, a period of intervention, then a post-intervention assessment. With this type of experiment, all members of the group receive the same treatment between the pre-intervention and the post-intervention assessments.

In this research study, all of the preservice teachers in their first semester internship experience were asked to bring a copy of their week two reflection to the large group seminar where they used an adapted version of the assessment instrument developed by Dr. Barbara Larrivee (2008) to analyze and score that reflection. They submitted both the reflection and the assessment instrument at the end of the seminar. The scored assessment instruments were placed in a folder to be analyzed at the end of

the study. The numbered copies of the reflections were randomly divided into three

groups and were scored using the same adaptation of the assessment instrument by three

supervisors previously trained in utilizing the assessment instrument.

Over the course of the semester, the preservice teachers received explicit

instruction on becoming a reflective thinker during their large group seminar meetings.

At the end of the semester, the preservice teachers were asked to bring a copy of their

week twelve reflection to analyze and score, again using the same adaptation of the

assessment instrument as in week two. They submitted both the reflection and

assessment instrument. The assessment instrument was again placed into a folder to be

analyzed at the end of the study. These copies of the reflections were divided according

to their number and distributed to the three supervisors to be scored. Each supervisor

scored the post-intervention reflections that corresponded with the pre-intervention

reflections they scored, as identified by numbers 1-47.

The Wilcoxon Signed-Rank Test was the statistical analysis formula used to

determine if there was a significant statistical change in the median scores from pre-

intervention to post-intervention. According to *The Handbook of Biological Statistics* by

McDonald (2008), the Wilcoxon Signed-Rank Test, which is a nonparametric statistic, is

used when the hypothesis is measuring the difference between observation pairs based on

the median scores, not the average (mean) scores as in the paired *t*-test. This formula was

chosen because the median scores, which were not normally distributed ranked data, were

used as a basis to show significant changes in the preservice teachers' reflective thinking.

Another reason the Wilcoxon Signed-Rank Test was chosen was because "there

are two nominal variables and one measureable variable" (McDonald, 2008, p. 181). For

this research study, the two nominal values are the items on the pre-intervention and post-intervention survey instrument, while the measurable variable is the median scores from the assessment instrument.

For this research study, the median scores from the week two reflection were compared to the median scores from the week twelve reflection to determine if a significant change occurred in the preservice teachers' reflective thinking.

Summary

This chapter discusses the methodology of the research study. It provides a detailed description of the demographics of the participants, of whom all were preservice teachers enrolled in an internship experience course. It also discusses the design and procedures of the research study, as well as how the data was collected and how it was analyzed. The following chapter, Chapter 4: Results, discusses the results of the research study.

CHAPTER FOUR: RESULTS

This research study examined the written reflections of first semester preservice teachers during the second and twelfth weeks of the semester. The instrument used was the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* developed by Barbara Larrivee (2008) (Appendix B). The instrument is divided into four levels: pre-reflection, surface reflection, pedagogical reflection and critical reflection. Each of the reflections for the pre-intervention reflections from the second week of the semester and the post-intervention reflections from the twelfth week of the semester were analyzed and scored by supervisors who had been trained to score these reflections. The results of the analysis are presented in this chapter.

Participants

The research participants for this study were forty-seven preservice teachers attending a university in south Florida. The participants were in their first semester of clinical experiences in which they spent one day a week interning in a public elementary school. Each of the preservice teachers anonymously completed an information and demographics data sheet at the beginning of the semester. As shown in Table 4.1, the participants were comprised of 91.5% females and 8.5% males. The vast majority of the participants listed their ethnicity as Caucasian while the remaining 19.4% of the participants listed their ethnicity as African American, Asian or Hispanic. Though most of these preservice teachers were between the ages of 20-29, it is important to note that 21.3% of the participants were 30 years old and older.

Table 4.1

Demographics of the 2009 Fall Semester Preservice Teachers

Demographic	N	%
Gender		
Female	43	91.5
Male	4	8.5
Ethnicity		
African American	5	10.6
Asian	2	4.3
Caucasian	38	80.8
Hispanic	2	4.3
Age Range		
20-29	37	78.7
30-39	5	10.6
40-49	5	10.6

Note. N= the number of students. % = the percentage out of the total number of students

The remainder of the information and demographics data sheet asked the preservice teachers general information about their personal experiences with children, such as teaching experiences and the number of education courses they had already taken or were currently taking that semester. These results are displayed in Table 4.2. Of the forty-seven participants, only 12.8% had substitute teaching experience, and 31.9% of them had six or more years of experience with elementary aged children that were not their own children. Thirty-one of the 47 study participants (66%) were Caucasian females in the 20 - 29 year-old age group with no substitute teaching experience. The remaining 16 participants represented various levels of the demographic and experience variables. Since this internship is one of the beginning courses in this teacher preparation program, all of the participants had taken or were currently taking four or less of their

educational courses, with almost half of them having had only two courses so far in the

program.

Table 4.2

"Previous Experience" and 'Number of Education Courses Taken/Taking' for the 2009 Fall Preservice Teachers

Demographic	N	%
Substitute Teaching Experience		
No experience	41	87.2
Some experience	6	12.8
Number of Courses Taken or Taking		
1	1	2.1
2	23	48.9
3	9	19.1
4	14	29.8
Experience with Children aged 4-12		
Less than 1 year	6	12.8
1-2 years	11	23.4
3-5 years	15	31.9
6-10 years	10	21.3
Over 10 years	5	10.6

Note. N= the number of students. % = the percentage out of the total number of students

Data Collection, Analysis and Results

The preservice teachers spent two full days per week interning in various

elementary public schools throughout three counties surrounding the university. Each

participant submitted a weekly written reflection discussing their elementary classroom

experiences. For purposes of this study the written reflections from the second week

(pre-intervention) and the twelfth week (post-intervention) of the semester were

collected, divided into thirds and scored by a one of the three trained supervisors.

As stated at the beginning of this chapter, the instrument used in this research study consists of four types of reflective levels. Three of the levels have 14 items each that correspond to that particular level, while the remaining level has 11 corresponding items resulting in a total of 53 items. The items in each level were ranked with either a 0 for not being mentioned in the written reflection, a 1 for being mentioned but not discussed, or a 2 for being mentioned and discussed. If a participant did not mention any of the 53 items in their written reflection, their total score would be zero. If a participant mentioned each of the 53 items the participant would receive one point for each item and therefore their total score would equal 53. Finally, if a participant mentioned and discussed each of the 53 items, the participant would receive 2 points for each item and their total score would be 106. It is possible for participants to receive any combination of points depending on the total items receiving a zero, one or two.

The maximum possible points are displayed in Table 4.3 along with the maximum score achieved by the study participants for the pre-intervention and post-intervention reflections. None of the 47 study participants obtained the maximum total score or the maximum score for any of the four levels.

Table 4.3

Maximum Possible Points and Achieved Highest Scores for Pre-intervention and Post-intervention

Level (total number of items)	Possible maximum	Pre-intervention highest score	Post-intervention highest score
Pre Reflection (14)	28	11	14
Surface Reflection (11)	22	6	5
Pedagogical Reflection (14)	28	8	13
Critical Reflection (14)	28	4	17
Total (53 items)	106	21	31

An overwhelming number of participants scored very low on the items of the survey, however, the total scores displayed in Table 4.4 do show some increase from pre-intervention to post-intervention reflection as more participants (40.4%) scored above ten on the post-intervention reflection compared with 19.1% of participants scoring above ten on the pre-intervention reflection.

Table 4.4

Distribution of Total Scores and Median Scores for Pre-intervention and Post-intervention

Total Score	Pre-intervention N	(%)	Post-intervention N	(%)
0	2	(4.3)	1	(2.1)
1-5	23	(48.9)	10	(21.3)
6-10	13	(27.7)	17	(36.2)
11-15	3	(6.4)	13	(27.7)
16-20	5	(10.6)	2	(4.3)
20-25	1	(2.1)	0	(0.0)
26-30	0	(0.0)	3	(6.4)
30-35	0	(0.0)	1	(2.1)
Total	47	(100.0)	47	(100.0)
Median Score	5.0		9.0	

Very few participants mentioned or discussed any of the 53 items on the instrument during the pre-intervention survey with two participants failing to mention any of the 53 items in their pre-intervention reflection. As seen in Table 4.5, only 9 of the 47 participants received a score of two within any single item during the pre-intervention scoring while close to half of the participants (46.8%) received a two on some of the items during the post-intervention reflection. This result indicates some

improved critical thinking by participants from just mentioning some items to discussing more items.

Table 4.5

Preservice Teachers Scoring

Scoring	Pre-intervention		Post-intervention	
	N	(%)	N	(%)
Neither mentioned or discussed any of the 53 items (received all 0's)	2	(4.3)	1	(2.1)
Mentioned some of the items (received 0's and 1's)	36	(76.6)	24	(51.1)
Discussed Some Items (received 0's, 1's and 2's)	9	(19.1)	22	(46.8)
Total	47	(100.0)	47	(100.0)

Hypothesis Testing

The null hypothesis for this study stated that there will be no statistically significant positive change in the median score from pre-intervention reflection to post-intervention reflection for the participants based on the results of the assessment instrument, *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* developed by Barbara Larrivee (2008) (Appendix B). The alternative hypothesis stated that there will be a significant positive increase in the median score from pre-intervention to post-intervention for the participants. Table 4.6 summarizes the results of the hypothesis test using the Wilcoxon Signed Rank statistic with a significance level of $\alpha = 0.05$.

Table 4.6

Median Pre-intervention and Post-intervention Score and Wilcoxon Signed Rank Statistic

Median Scores		Wilcoxon Signed Rank	p-value
Pre-intervention	Post-intervention	(WSR)	
5.0	9.0	209.5	0.0096

The results of the Wilcoxon Signed Rank Statistic indicated a significant increase in the median score for the study participants from pre-intervention reflection to post-intervention reflection (WSR = 209.5, p-value = 0.0096). As discussed earlier in the chapter, there was some positive achievement change indicated by the scores, with more participants mentioning and discussing items in their post-intervention reflections than in their pre-intervention reflections.

Table 4.7

Change in Total Score from Pre-intervention to Post-intervention

Pre-intervention to Post-intervention Score	Number of Participants	Percentage of Participants
Decreased	12	25.5
Remained the Same	4	8.5
Increased by		
1-5 points	14	29.8
6-10 points	8	17.0
11-15 points	5	10.6
16-20 points	1	2.1
21-25 points	3	6.4
Total Increased	31	66.0
Total	47	100.0

Table 4.7 shows that 31 of the 47 participants (66%) showed an increase in their total score from pre-intervention reflection to post-intervention reflection. Among the 31 participants who had an increase, 17 increased by more than 5 points. Since there was a significant increase in the median scores for the participants from pre-intervention to post-intervention additional analyses were run to uncover any other significant findings.

<div align="center">

Additional Analyses

</div>

Relationship Analysis

A Spearman Rho correlation analysis was run to determine any significant relationships between the pre-intervention to post-intervention difference in scores and any of the ordinal or ratio level demographic variables. In addition, the correlation was determined between the change in score and the pre-intervention score.

The results of the correlation analysis shown in Table 4.8, suggest that the only significant relationship is the one between the pre-intervention score and the pre-intervention to post-intervention difference in scores (Spearman Rho = -0.5732, p-value < 0.0001). This result suggests that the higher the pre-intervention score, the smaller the difference from pre-intervention to post-intervention. In other words, participants who started with lower pre-intervention scores saw greater gains from pre-intervention to post-intervention. Though this result may seem trivial, it is not at all. The pre-intervention scores were all very low (the highest score was a 21 out of 106) indicating that everyone had tremendous opportunity for a sizable increase in their score. Moreover, this finding indicates that those students who have the greatest deficits in reflective thinking skills made the greatest gains. This data also suggests that reflective thinking skills can, in fact, be taught.

Table 4.8

Spearman Rho Correlation Coefficient and p-value for Total Change in Score

Correlation between Change In Total Score and:	Spearman Rho Correlation Coefficient	p-value
Age Group	-0.263	0.0737
Number of Years Experience With Children aged 4-12	-0.206	0.1647
Number of Courses Taken or Currently Taking	0.072	0.6309
Pre-intervention Total Score	-0.573	<0.0001

Note: Significant p-value difference at α = 0.05 significance level

Another interesting result, although not significant (Spearman Rho = -0.2634, p-value = 0.0737), is the negative direction for the relationship between age group and change in score. As shown in Table 4.9, participants in the 30 - 39 year-old age group had a decrease in their median score from pre-intervention to post-intervention as compared with the other age groups which all showed an increase in their median scores.

Table 4.9

Median Pre-intervention and Post-intervention Scores by Age Group

Age Group	N	Pre-intervention Median Score	Post-intervention Median Score
20-29	37	5	9
30-39	5	12	9
40-49	5	7	9

Level Analyses

The instrument used to assess reflection, *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* developed by Barbara Larrivee (2008) (Appendix B), was divided into four levels as discussed earlier. The number of participants whose scores changed from pre-intervention to post-intervention for each level is presented below in Table 4.10.

Table 4.10

Change in Score from Pre-intervention to Post-intervention by Level

Pre-intervention to Post-intervention Score	Pre-reflective Reflection Level N (%)	Surface Reflection Level N (%)	Pedagogical Reflection Level N (%)	Critical Reflection Level N (%)
Decreased	21 (44.7)	15 (31.9)	11 (23.4)	6 (12.8)
Remained the same	9 (19.1)	13 (27.7)	5 (10.6)	26 (55.3)
Increased	17 (36.2)	19 (40.4)	31 (66.0)	15 (31.9)
Total	47 (100.0)	47 (100.0)	47 (100.0)	47 (100.0)

To determine if the significant change in the total score might be attributed to one of these four levels, an analysis of the difference in median scores from pre-intervention to post-intervention was conducted for each of the four levels. The results are displayed in Table 4.11. The only level to show a significant change in median score from pre to post-intervention is Level 3 - Pedagogical Reflection (WSR = 270.0, p-value = 0.0003).

Table 4.11

Median Scores and Wilcoxon Signed Rank Statistics by Level

Level (# items)	Median Scores		Wilcoxon Signed Rank (WSR)	p-value
	Pre-intervention	Post-intervention		
Pre-reflection Level (14)	2.0	1.0	-11.5	0.8695
Surface Reflection Level (11)	1.0	1.0	53.0	0.3670
Pedagogical Reflection Level (14)	1.0	4.0	270.0	0.0003
Critical Reflection Level (14)	0.0	0. 0	46.5	0.1024

Note: Significant p-value difference at α = 0.05 significance level.

The results of the correlation analysis in Table 4.12 show two significant relationships for the 3rd level of the instrument, Pedagogical Reflection. Participants with more years of experience with children aged 4 to 12 tended to have a larger increase in their pre-intervention to post-intervention pedagogical reflection score (Spearman Rho = 0.3084, p-value = 0.0349) as compared to those with less years of experience. Similar to the total score result, participants with a lower pre-intervention pedagogical reflection showed a greater increase in pre-intervention to post-intervention scores on this level.

Table 4.12

Spearman Rho Correlation Coefficient and p-value for Pedagogical Reflection

Correlation between Change In Pedagogical Reflection Score and:	Spearman Rho Correlation Coefficient	p-value
Age Group	-0.1795	0.2273
Number of Years Experience With Children aged 4-12	0.3084	0.0349
Number of Courses Taken or Currently Taking	0.0432	0.7729
Pre-intervention Total Score	-0.4861	0.0005

Note: Significant p-value difference at $\alpha = 0.05$ significance level

Individual Item Results

Several of the items showed some movement from pre-intervention to post-intervention reflection and are interesting to note. These items were typically within the pedagogical reflection level which was the only level to show a significant change from pre-intervention to post-intervention.

The first item from the assessment instrument that showed movement from pre-intervention to post-intervention was "Analyzes relationship between teaching practices and student learning" (Larrivee, 2008) (Appendix B). Pre-intervention scores showed that 83% of the participants did not mention this in their pre-intervention reflections however by post-intervention 46.8% were able to analyze relationships between practice and theory. The second item of interest was, "Strives to enhance learning for all students" (Larrivee, 2008) (Appendix B), showed gains as well. 68.1% of the

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participants did not mention enhancing learning for students in their pre-intervention reflection, but by the post-intervention, 61.7% of them were mentioning the need to enhance learning for all, with 4.3% of these participants giving explicit details as to how to enhance the learning.

The next item was "Has genuine curiosity about the effectiveness of teaching practices; leads to experimentation and risk-taking" (Larrivee, 2008) (Appendix B). In this item the participants moved from 14.9% of them mentioning something about the effectiveness of teaching practices to 44.7% of them mentioning it. The same was true for the fourth item, "Engages in constructive criticism of one's own teaching" (Larrivee, 2008) (Appendix B); 80.9% did not mention their own teaching in the pre-intervention reflection but by the post-intervention reflection, 44.7% mentioned it with 8.5% of participants critiquing their own teaching in more detail. The final item of interest was "Has commitment to continuous learning and improved practice" (Larrivee, 2008 (Appendix B). In the pre-intervention reflection, almost all of the participants (91.5%) did not mention the need for continuous learning. By the post-intervention reflection, 38.3% of the participants realized the need for continuous improvement and mentioned it in their reflection.

Table 4.13

Selected Pedagogical Reflection Items Showing Movement

Level Three - Pedagogical Reflection	Pre-intervention Percent			Post-intervention Percent		
	NM	M	M/D	NM	M	M/D
Analyzes relationship between teaching practices and student learning	83.0	14.9	2.1	53.2	36.2	10.6
Strives to enhance learning for all students	68.1	31.9	0.0	38.3	57.4	4.3
Has genuine curiosity about the effectiveness of teaching practices; leads to experimentation and risk-taking	85.1	14.9	0.0	55.3	38.3	6.4
Engages in constructive criticism of one's own teaching	80.9	17.0	2.1	55.3	36.2	8.5
Has commitment to continuous learning and improved practice	91.5	8.5	0.0	61.7	34.0	4.3

Note: Not M = Item was neither mentioned or discussed; M = Item was mentioned; M/D = Item was mentioned and discussed

Participant Self Ratings

Forty-four of the 47 participants self-scored their reflections. The median pre-intervention and post-intervention total scores were 16 and 27 respectively compared to 5 and 9 when the supervisors scored the reflections. The following two figures show the median pre-intervention and post-intervention scores given by the supervisors as compared to the median scores when self-scored by the participants for each of the four levels of the instrument.

Figure 4.1

Pre-intervention Median Score Comparison
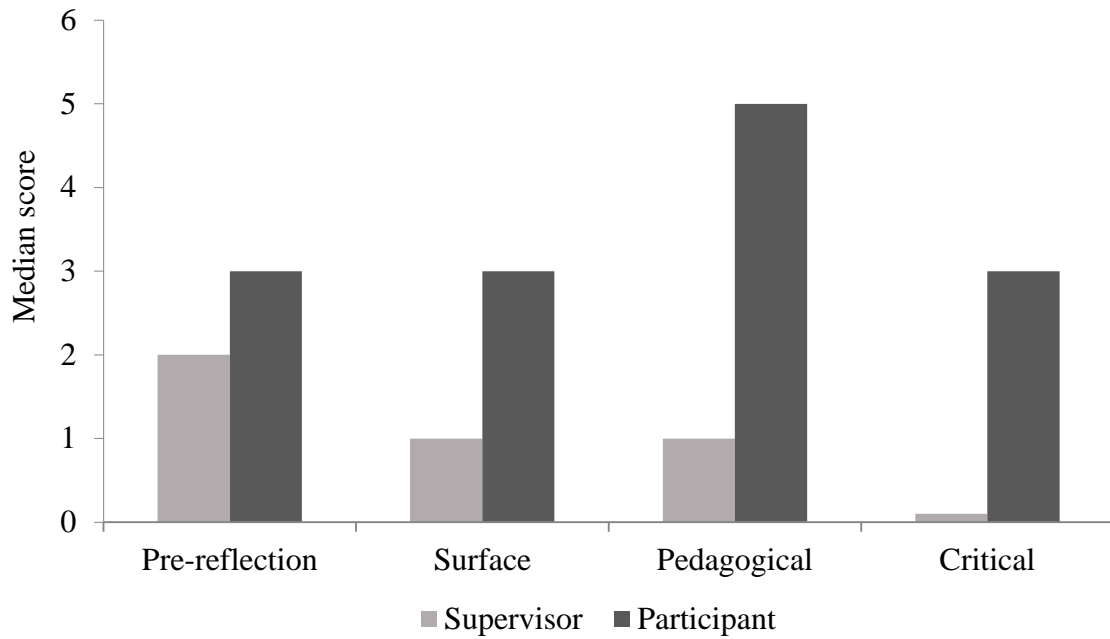
Figure 4.2

Post-intervention Median Score Comparison
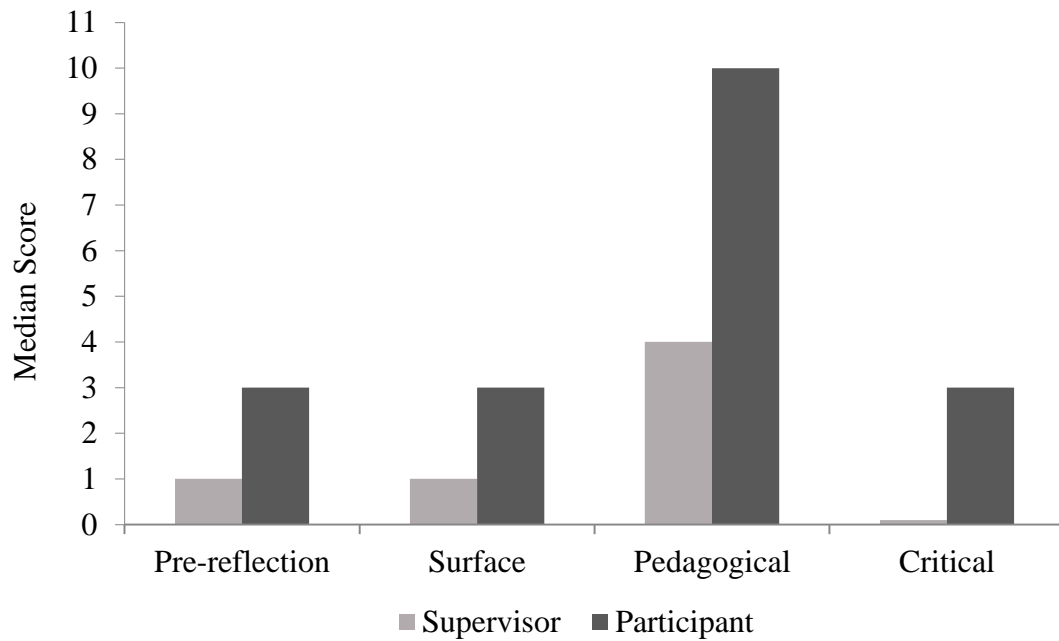
As seen in both of the figures, the participants scored themselves highest in the pedagogical reflections for pre-intervention and post-intervention. The pedagogical reflection level also received the largest increase in score from pre-intervention to post-intervention which is consistent with the supervisors' ratings, though the supervisors' scores were not as high. The contrast, however, is that the participants rated their critical reflection as the second highest level where the supervisors overwhelmingly rated most items in this level a zero indicating that the items were not mentioned nor discussed during the pre and post reflection.

CHAPTER FIVE: DISCUSSION

This dissertation research study has explored whether or not explicit instruction on being a reflective thinker can be taught to preservice teachers in one semester. This final chapter includes a summary of the findings, a discussion of the findings of the study, limitations of the study and implications and recommendations for future studies.

Summary of the Findings

The research study examined the written reflections of first semester preservice teachers during the second and twelfth weeks of the semester. The instrument used was an adapted version of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* developed by Barbara Larrivee (2008) (Appendix B). The instrument is divided into four levels: pre-reflection, surface reflection, pedagogical reflection and critical reflection. Each of the reflections for the pre-intervention reflections from the second week of the semester and the post-intervention reflections from the twelfth week of the semester were analyzed and scored by supervisors who had been trained to score these reflections.

The reflections for the preservice teachers from the second week of the semester were the first ones analyzed and scored by the supervisors. The median scores reflected that, in the pre-intervention part of the study, about 81% of the preservice teachers were thinking on the lowest level of reflective thinking; the level that is considered to be focused on self and the technical, routine aspects of teaching. The findings in this research study are consistent with the findings in other research studies such as ones conducted by Bell, Kelton, McDonagh, Mladenovic, & Morrison (2011), Pihlaja & Holst (2011) and Seng (2001). In these studies, the researchers found that large percentages of their participants' journal writings fell into the low level of reflective thinking. This pre-

reflection level is the one that is routine; where there is a self-focus on what is happening in the classroom without any evaluation of the circumstances, the quality of teaching or the effects of decisions that were made (Bruster & Pe4terson, 2012; Dewey, 1933; Francis, Tyson, & Wilder, 1999; Griffin, 2003; Hatton & Smith, 1995; Jay & Johnson, 2002; Larrivee, 2008; Lee, 2005; Pihlaja & Holst, 2011; Schön, 1983/1987; van Manen, 1977; Ward & McCotter, 2004; Zeichner & Liston, 1996).

The median scores from the preservice teachers' post-intervention reflections showed that there was a shift in their thinking from the more technical to more critical level of reflective thinking after receiving the intervention of explicit instruction on the process of reflective thinking. The findings in this research study are consistent with prior studies conducted by Bruster & Peterson (2012), Francis (1995), Francis, Tyson, & Wilder (1999), Griffin (2003), Hagevik, Aydeniz, & Rowell (2012), Hoover (1994), Lee (2005), Lynch, McNamara, & Seery (2012) and Rosen (2008). Each of these studies determined that the participants were at the lower technical end of the reflective thinking process in the beginning of their study, but by the end of the study the participants had demonstrated some growth towards the higher end of the reflective thinking process.

This higher end of the reflective thinking process is considered the critical level. At this level, there is more of a focus on the questioning of teaching practices, determining the best decisions in lieu of the circumstances, and the effects and impacts on student achievement, with theory as the basis for the line of questioning (Boyd, Boll, Brawner, & Villaume, 1998; Bruster & Peterson, 2012; Dewey, 1933; Ewart & Straw; 2005; Gipe & Richards, 1992; Hatton & Smith, 1995; Jay & Johnson, 2002; Larrivee, 2008; Lee, 2005; Minor, Onwuegbuzie, Witcher, & James, 2002; Ostorga & Estrada,

2009; Schön, 1983/1987; van Manen, 1977; Ward & McCotter, 2004; Zeichner & Liston, 1996).

Findings of the Study

Reflective thinking has become a part of most teacher preparation programs in order to prepare preservice teachers to be reflective thinkers (American Association of Colleges for Teacher Education, 2010; National Board of Professional Teaching Standards, 2007: National Council for Accreditation of Teacher Education, 2008). The teacher preparation program at the university in this study is no different; one of its three major foundational tenants is to produce teachers who are able to think critically and reflectively.

Research Question

This research study sought to answer the following research question:

1. Will first-semester preservice teachers' written reflections demonstrate growth in reflective thinking after receiving explicit instruction concerning reflective thinking and practices?

The findings of this research study conclude that, yes, with explicit instruction on the reflective thinking process and practices, that preservice teachers did experience some growth over the course of the semester in their written reflections.

These preservice teachers, who were enrolled in their first internship experience course, spent two days a week for a semester in an elementary classroom environment. Each week they would submit a written reflection about their thoughts and experiences. The reflections from the second week (pre-intervention) and the twelfth week (post-intervention) were scored by trained supervisors, as well as the preservice teachers, using

the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B). During weeks three through eleven, the preservice teachers continued to go to their internship schools, participated in four seminars in which they were explicitly taught about the reflective thinking process, given opportunities to discuss various scenarios in cooperative learning groups, and discussed various philosophies of education.

When reviewing the findings from the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B), the points awarded for each student's survey were totaled and the pre-intervention and post-intervention scores were compared to answer the research question. When this data was analyzed, it was found that 66% of the preservice teachers' total scores on their written reflections increased between the pre-intervention and post-intervention, with a little over half of these preservice teachers increasing their scores by more than five points.

Null Hypothesis

The null hypothesis for this research study was:

1. Using the Wilcoxon's Signed Rank test on the supervisors' score analysis, there will be no statistically significant positive change in the median score of the preservice teachers' written reflections from week two (pre-intervention) to week twelve (post-intervention) after four sessions of intervention.

To determine if there was a statistically significant positive change between the pre-intervention and post-intervention median scores of the preservice teachers' written reflections, the Wilcoxon Signed Rank statistic test was used. The median score for the

pre-intervention was 5.0 and the median score for the post-intervention was 9.0. With a p-value of 0.0096, which is under the significance level of 0.05, the data shows that there was a statistically significant change in the preservice teachers' written reflections between the pre-intervention and post-intervention. An overall general increase in students' reflective abilities is evident in the data. A more in depth analysis to determine in which level or levels there was more growth or correlation and an examination of possible contributing factors follows.

Relationship Analysis

Due to the statistically significant change in the pre-intervention and post-intervention median scores, correlational analyses were run using the Spearman Rho Correlational Test. The Spearman Rho was run to determine if there were any correlations in this research study between the change in the total score and demographics of the preservice teachers, particularly age, number of years of experience with elementary aged children and the number of education courses being taken currently or in the past.

It was found that there was no significant correlation found between the change in preservice teachers' total scores on the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B) and the age of the preservice teachers (p-value = 0.0737). Nor was a correlation found between the change in preservice teachers' total scores and the number of years of experience working with elementary aged children (p-value = 0.1647) or the number of education courses currently taking or taken in the past (p-value = 0.6309).

There was, however, a correlation between the change in the total scores and the pre-intervention scores (p-value < 0.0001). In analyzing the pre-intervention scores, it was found that the total scores for all of the preservice teachers were all relatively low, with no one scoring more than 21 out of 106 possible points. Therefore, each preservice teacher had ample opportunity to show growth in thinking more critically.   Nevertheless, this correlation indicates that those preservice teachers who had the lowest pre-intervention scores on the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B) displayed the most growth in reflective thinking. This finding not only shows that reflective thinking skills in fact can be taught, but also that those students who are most in need of improving these skills are most likely to do so.

Level and Item Review

Because of the statically significant change in the median scores between the pre-intervention and post-intervention, additional analyses using the Wilcoxon Signed Rank test were run on the median scores from each level of the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B) to determine if this change between the pre-intervention and post-intervention could be attributed to one or more of the levels. That determination was then used to see if there were any correlations with the preservice teachers' age, number of years of experience with elementary aged children, and with the number of education courses currently taken or taken in the past.

Interestingly, the only level that had a significant change was the pedagogical level (p-value = 0.0003). Since this was the only level to show a statistically significant

change from pre-intervention to post-intervention, a review of the items in this level was conducted to determine if there was any one particular item that contributed to the significant change.

There were five items of the fourteen items in the pedagogical level that showed a change from pre-intervention to post-intervention, of which all five items indicated an increased awareness of the connection between best practices in teaching and student achievement. The largest growth was shown in three of these five items, of which all three incorporated the aspect of improving teaching practices. The items were: analyzes the relationship between teaching practices and student learning, has a genuine curiosity about the effectiveness of teaching practices, and has a commitment to continuous learning and improved practice. This increased awareness of their personal teaching practices indicates that the preservice teachers are realizing that they are responsible for their own teaching which affects student learning and achievement.

As with the pre-intervention total scores, the preservice teachers' scores for the pedagogical level were all low with the preservice teachers scoring less than 8 out of a possible total of 28 points on the pre-intervention, meaning that all participants had room to grow in their reflective thinking as it connected to pedagogy. The preservice teachers with the lowest scores displayed the most growth in this area, just as in the total pre-intervention scores. In analyzing the pedagogical level of reflective thinking, the scores again indicate that reflective thinking is a skill that can be taught.

Participant Self Ratings

The last additional analysis considered was the self-scoring scores of the preservice teachers on the *Survey of Reflective Practice: A Tool for Assessing*

Development as a Reflective Practitioner for Facilitators and Self Assessment (Larrivee, 2008) (Appendix B). Though this research study focused on the scores from the assessment instrument that were determined by the trained supervisors, the preservice teachers were also asked to score their own written reflections from weeks two and twelve.

The median total scores from the preservice teachers' self-scoring of their pre-intervention and post-intervention written reflections were 16 and 27 respectively. These median scores are much higher than the median total scores of 5 and 9 for the pre-intervention and post-intervention scores determined by the trained supervisors.

In the pre-intervention scoring, the preservice teachers scored themselves highest in the pedagogical level, with a median score of 5, while the trained supervisors scored this level with a median score of 1. For the post-intervention, the preservice teachers again scored the pedagogical level as their highest, with a median score of 10, while the trained supervisors scored them with a median score of 4.

The critical reflection level was the level that the preservice teachers scored their written reflections the second highest with a 3 in the pre-intervention, while they received a 0 from the trained supervisors in this level. For the post-intervention scores of the critical thinking level, the preservice teachers scored their written reflections with a median score of 6 while the trained supervisors still scored them at a 0. Though the preservice teachers' median scores in the critical level of reflective thinking demonstrated growth, the median scores for this same level from the trained supervisors did not demonstrate growth.

The trained supervisors' findings supports the findings of Pihlaja & Holst (2011) and Ward & McCotter (2004), that reaching the critical reflective thinking level is difficult to do.

Limitations of the Study

Though the findings in this research study support the belief that reflective thinking is a process that can be taught to preservice teachers, there are some limitations to the research study that should be noted.

Limitation One

The first limitation regarding this research study is the assessment instrument. This research study sought to utilize a current, reliable assessment instrument for evaluating preservice teachers' written reflections. After reviewing many recent studies dealing with evaluating reflective thinking via writing, the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner for Facilitators and Self Assessment* (Larrivee, 2008) (Appendix B) was the assessment instrument chosen because it appeared to be the best measurement instrument for this particular research study. It appears that Dr. Larrivee (2008) developed the instrument to be used as an observation tool to "guide developing teachers through a discovery process by strategically prompting them to think and act in new ways" (p. 346). Since this research study wanted to use the assessment instrument to evaluate preservice teachers' written reflections, a statement of permission to adapt and use (Appendix D) was given by Dr. Larrivee. Thus the first limitation of this study, utilization of an assessment instrument for evaluating written reflections, seems to have been originally designed for use as a visual observation tool.

Limitation Two

The second limitation of this research study involves the written reflections. In the beginning of the research study, it was emphasized to the preservice teachers that their reflections were to be a true reflection of what they were thinking and experiencing in their internship classrooms. However, it is difficult to measure if some of the written reflections were written from a real-life experience or were written in a way that the preservice teachers believed was expected of them. If any of the written reflections were not truly what the preservice teachers were thinking and experiencing, then their written reflections are not true reference points for evaluating reflective thinking.

Limitation Three

The third limitation of the research study consists of the training of the supervisors. Though training was provided, complete with expectations, samples, discussions and consensuses, no inter-rater reliability was determined. To ensure consistency among the supervisors, each supervisor should have scored several of the same preservice teachers' written reflections so that these scores could be compared. Such a comparison would have provided the inter-rater reliability score necessary to add depth and reliability to this research study.

In addition to the limitation of lack of inter-rater reliability, the supervisors received no "refresher" trainings following the initial pre-semester training on how to score the surveys. This lack of subsequent trainings may have resulted in an inconsistency in the scoring between the pre-intervention and the post-intervention and would be something for researchers to consider adding in future studies.

Limitation Four

The fourth limitation of this research study deals with the length of time of the study. This research study covered one fifteen week semester at a university in Florida. The preservice teachers in the research study spent two full days a week for thirteen weeks interning in an elementary school classroom. The research study began with the second week's reflections. The next ten weeks consisted of explicit instruction on the reflection thinking process and practices. The research study concluded with the week twelve reflections. The limitation may be the length of time for the study. This research study supports the findings in studies conducted by Francis (1995), Francis, Tyson, & Wilder (1999), Hourani (2013), Rosen (2008), and Ward & McCotter (2004) determining that preservice teachers need longer time than just a few weeks or a semester to improve their reflective thinking skills to a more critically reflective level. This is a factor that teacher preparation programs should consider embedding into all of their courses from the time the preservice teacher is admitted to the College of Education as a future teacher.

Limitation Five

The final limitation of this research study is the fact that there was only one group of preservice teachers. Due to constraints placed on this research study by the university in which the preservice teachers were enrolled, there was no control group. Each of the forty-seven preservice teachers received the same pre-intervention survey, the same explicit instruction over the ten week period of intervention, and then the same post-intervention survey. Though each preservice teacher wrote their own reflection based on their internship experiences, they all received the same explicit instruction during the intervention time frame. The findings of this study would be more significant if there had

been two groups of participants and if a positive statistical change existed that was greater for the experimental group that received no explicit instruction on the reflective thinking process than that of the control group.

Implications, Recommendations and Future Studies

Implications

Teachers around the state of Florida are striving to meet the academic standards that have been established by the state of Florida (Title XLVIII; K-20 Education Code, 2002), as well as by the federal government (Public Law 107-110, 2002), for their students. The teachers in Florida strive to use best practices so that there is improved student achievement. To determine best teaching practices, teachers should become aware of their own thinking and problem-solving processes (metacognition) to decide on the best possible solution to problems and situations that arise in the classroom. Learning these problem-solving skills should begin in the teacher preparation programs so that teachers are better equipped to handle these situations and events effectively in order to positively impact student achievement.

This research study analyzed the written reflections of preservice teachers' internship experiences to determine the level of their reflective thinking skills. Based on the findings of this research study, which supports the beliefs of Bates, Ramirez, & Drits (2009), Bean & Stevens (2002), Davis (2006), Freese (2006), Griffin (2003), Lee (2008), Mahlios, Engstrom, Soroka & Shaw (2008), Marcos, Sanchez, & Tillema (2011), Nagle (2008), Norsworthy (2009), Ostorga & Estrada (2009), Pihlaja & Hoist (2011), and Thorsen & DeVore (2013), it has been concluded that the reflective thinking process is a skill that can be taught. This means that teacher preparation programs need to

incorporate the process and practice of reflective thinking into all teacher education courses to best prepare their preservice teachers to become reflective, and therefore more effective, teachers.

Recommendations

The results of this dissertation study were shared with the research university utilized within it. The university, in accordance with its tenant of reflective thinking, will continue to explicitly teach the skills and the process of reflective teaching to the first semester preservice teachers as presented in this study. There are several recommended improvements determined from the limitations identified in this dissertation study that would be beneficial for the teacher preparation program at this university to consider when implementing changes.

One improvement would be to extend the instruction of reflective thinking to the preservice teachers' second internship seminars, as well as their final internship seminars, totaling three semesters. By extending the length of explicit teaching time of reflective thinking and thus providing additional instruction, supervision, and feedback, it is hoped that the preservice teachers would become more reflective in their writing as well as their thinking. As is discussed in this study, such an increase would positively impact student achievement.

Training the supervisors more efficiently and more frequently throughout the year would be another improvement the university could make to the reflective thinking process. In this study, supervisors were trained in the beginning of the semester only. The university should not only provide training for the supervisors in the beginning of the semester, but provide "refresher sessions" for them throughout the semester. These

should be scaffolded and aligned with each of the four seminars on reflective thinking. Scaffolding the refresher sessions for the supervisors would guide them to focus on the most recent area of reflective thinking instruction when responding to the preservice teachers which would allow for more targeted, helpful feedback.

A final improvement that the university could implement would be to utilize the survey instrument more often than just at the beginning and end of the semester. Preservice teachers could be exposed to the survey instrument at the beginning of the semester as in this study. However, over the course of the semester, the preservice teachers would learn more about each survey item individually in their seminars. Spending time on each level of the survey instrument would provide the preservice teachers information not only about each level but more details on the process of reflective thinking and how each level builds on and compliments the others.

Future studies

Future studies need to be conducted to consider the influences of the usage of other instructional techniques, such as video-taping and case studies. Another future study could conduct a beliefs and characteristics survey of the preservice teachers prior to entering the College of Education, and then monitor them through the program to determine if those beliefs and characteristics changed through their experiences. It would also be beneficial to begin a study with a group of preservice teachers, provide them with continuous explicit instruction concerning the reflective practice and process, and follow them through the entire length of their program. During this time, their reflective thinking processes and practices could be measured consistently to better determine if, in fact, the highest level of critical thinking is a skill that can be taught.

Conclusion

With teachers being held accountable for improved student learning, it is important that they understand how being a critically reflective thinker can help them become more effective teachers, thus increasing student achievement. However, learning the practice and process of reflective thinking is a skill that should begin when teachers are just beginning their teacher education programs. This dissertation research study concluded that the reflective process is a skill that, with explicit instruction, can be taught to preservice teachers over the course of the semester. Although this study was explored through one specific teacher preparation program, the findings and suggestions are relevant to other programs and other state education standards. Therefore, teacher education programs should consider developing a support system for their preservice teachers that includes explicit instructions on reflective thinking and the process of reflective thinking, as well as an outlet for reflecting on what they are experiencing. When preservice teachers are reflectively questioning their own teaching practices, they will become more reflective and effective future classroom teachers, thus leading to an improvement in student achievement.

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APPENDIX A
University written reflection form

Journal Entry Date _____ **Week No.** ___of 14 weeks **Grade** _____

Intern's Name: _____ **Teacher:** _____

(Make 14 copies of this form – to be used each week)

I. Please describe and summarize your experiences for the week.

II. What did I learn from today's observations and/or teaching experiences? Insights gained? Questions that remain?

Adapted from the Survey of Reflective Practice: A Tool for Assessing Development
as a Reflective Practitioner for Facilitators and Self Assessment

Practice Indicators	Scoring		
	Not mentioned	Mentioned	Mentioned and discussed
Operates in survival mode; reacting automatically without consideration of alternative responses			
Enforces preset standards of operations without adapting or restructuring based on students' responses			
Does not support beliefs and assertions with evidence from experience, theory or research			
Is willing to take things for granted without questioning			
Is preoccupied with management, control and student actions			
Fails to recognize the interdependence between teacher and student actions			
Views student and classroom circumstances as beyond the teacher's control			
Attributes ownership of problems to students or others			
Fails to consider differing needs of learners			
Sees oneself as a victim of circumstances			
Dismisses students' perspectives without due consideration			
Does not thoughtfully connect teaching actions with student learning or behavior			

Describes problems simplistically or uni-dimensionally			
Does not see beyond the demands of a teaching episode			
Limits analysis of teaching practices to technical questions about teaching techniques			
Modifies teaching strategies without challenging underlying assumptions about teaching and learning			
Fails to connect specific methods to underlying theory			
Suggests beliefs only with evidence from experience			
Provides limited accommodations for students' different learning styles			
Reacts to student responses differentially but fails to recognize patterns			
Adjusts teaching practices only to current students without developing a long-term plan			
Implements solutions to problems that focus only on short-term results			
Makes adjustments based on past experience			
Questions the utility of specific teaching practices but not general policies or practices			
Provides some differentiated instruction to address students' individual differences			

Analyzes relationship between teaching practices and student learning			
Strives to enhance learning for all students			
Seeks ways to connect new concepts to students' prior knowledge			
Has genuine curiosity about the effectiveness of teaching practices; leads to experimentation and risk-taking			
Engages in constructive criticism of one's own teaching			
Adjusts methods and strategies based on students' relative performance			
Analyzes the impact of task structures, such as cooperative learning groups, peer or other groupings, on student learning			
Searches for patterns, relationships and connections to deepen understanding			
Has commitment to continuous learning and improved practice			
Identifies alternative ways of representing ideas and concepts to students			
Recognizes the complexity of classroom dynamics			
Acknowledges what students bring to the learning process			
Considers students' perspectives in decision making			
Sees teaching practices as remaining open to further investigation			

Views practice within the broader sociological, cultural, historical and political contexts			
Considers the ethical ramifications of classroom policies and practices			
Addresses issues of equality and social justice that arise in and out of the classroom			
Challenges status quo norms and practices, especially with respect to power and control			
Observes self in the process of thinking			
Is aware of incongruence between beliefs and actions and takes action to rectify			
Acknowledges the social and political consequences of one's teaching			
Is an active inquirer, both critiquing current conclusions and generating new hypotheses			
Challenges assumptions about students and expectations for students			
Suspends judgments to consider all options			
Recognizes assumptions and premises underlying beliefs			

Calls commonly-held beliefs into question			
Acknowledges that teaching practices and policies can either contribute to or hinder the realization of a more just and humane society			
Encourages socially responsible actions for the students			

APPENDIX C
Demographics/Experience survey

1. Gender: _____ Male
   _____ Female

2. Age: _____ 19 and under
   _____ 20-29
   _____ 30-39

   _____ 40-49
   _____ 50-59
   _____ 60 and over

3. Ethnicity: _____ African American
   _____ Asian
   _____ Caucasian
   _____ Hispanic
   _____ Native American
   _____ Pacific Island
   _____ Other – please list _____

4. Substitute teaching experience: _____ yes
   _____ no

5. Experience with children aged 4-12 (not your own): _____ less than 1 year
   _____ 1-2 years
   _____ 3-5 years
   _____ 6-10 years
   _____ over 10 years

6. Number of education courses taken or currently taking: _____ 1-2
   _____ 3-5
   _____ 6-10
   _____ over 10

7. Campus: _____ SP
   _____ PHCC

Statement of Permission to Use

Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner

I, Barbara Larrivee, hereby grant permission to use the *Survey of Reflective Practice: A Tool for Assessing Development as a Reflective Practitioner*, to:

Name: Stephanie Weber

Institution: Liberty University

Address: 1971 University Blvd.

      Lynchburg, VA 24502

Phone no.: 727-521-3797

E-mail: sweber@liberty.edu

This permission is granted for research purposes only. If changes are made to the Survey, the citation must say "adapted from."

The above named also agrees to provide a written summary of findings including a by-item analysis. This report should be sent within 30 days of completion of the research via e-mail to blarrive@csusb.edu.

Dr. Barbara Larrivee, Professor

Department of Language, Literacy and Culture

California State University

5500 University Parkway

San Bernardino, CA 92407-2397

I agree to these terms to use the Survey.

Stephanie S. Weber   September 19, 2009
Survey User   Date

Becoming A Reflective Teacher

WANTED: A Reflective Teacher

A person who is inherently curious; someone who doesn't have all the answers and isn't afraid to admit it; someone who is confident enough in his or her ability to accept challenges in a non-defensive manner; someone who is secure enough to make his or her thinking public and therefore subject to discussion; someone who is a good listener; someone who likes other people and trusts them to make the right decisions if given the opportunity; someone who is able to see things from another's perspective and is sensitive to the needs and feelings of others; someone who is able to relax and lean back and let others assume the responsibility of their own learning. Some experience desirable but not as important as the ability to learn from mistakes (Larrivee, 2006, p. 11)

In groups of three discuss the following:

1. Which qualities in the ad do you possess?

2. Which one is your greatest strength?

3. Which one is your biggest challenge?

Larrivee, B. (2006). *An educator's guide to teacher reflection.* Boston, MA: Houghton Mifflin Company

What does being reflective mean?

<u>Barbara Larrivee (2006)</u>: The conscious consideration of the moral and ethical implications and consequences of classroom practices on students (p. 34).

<u>Thomas Farrell (2004)</u>: It requires that teachers examine their values and beliefs about teaching and learning so that they can take more responsibility for their actions in the classroom.

<u>Kenneth Zeichner (1996)</u>: Recognizing that teachers, having their own beliefs, ideas and theories, should be active in formulating the purposes and ends of their work, should examine their own values and assumptions, and become leaders in curriculum development and school reform.

<u>John Dewey (1933)</u>: Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends (p. 9).

Why be a reflective teacher?

1. Helps us take informed actions
   - informed actions are those actions that can be explained and justified to others as well as ourselves
   - we can show how our action comes from certain assumptions and beliefs we hold about teaching and learning
   - we can see how others may perceive our actions and take steps to ensure our meaning is understood correctly

2. Helps us develop a rationale for practice
   - it helps us know why we believe what we believe
   - informed commitment about our beliefs, values and assumptions
   - able to be clear about what we stand for and why we believe this – establishes credibility with students and peers
   - provides a set of tested beliefs that we can use as a guide for how to act in unpredictable situations
   - our foundational beliefs will remain basically the same, however we continue to learn ways to realize them in our work

---

3. Grounds us emotionally
   - if we neglect to clarify and question our beliefs and assumptions or we fail to know our students, we can feel the world is chaotic
   - this causes us to feel powerless to control the daily ups and downs of our emotions
   - if we get caught in this emotional roller coaster, we cannot survive long – either withdraw or suppress our feelings
   - being critically reflective will keep us grounded and is connected to teacher morale

4. Enlivens our classrooms
   - our students are constantly observing our actions
   - important that we model how to critically think through an issue to stimulate our students' own critical thinking
   - by openly questioning our own beliefs and assumptions we are creating an emotional environment that allows risk-taking and accepts change

5. Increases democratic trust
   - what we do as teachers makes a difference in the world
   - within our classroom the students learn that independent thought is valued or that everything depends on following and pleasing the teacher
   - students learn to work collaboratively
   - by being critically reflective we learn a little more about the effects we are having on our students
   - we should listen attentively to what students say – if we ignore them, we can stifle and silence their thoughts; if we listen we can activate their creativity and independence in thought
   - take time to discuss student concerns as a class activity

Adapted from:
Brookfield, S. D. (1995). *Becoming a critically reflective teacher*. San Francisco, CA: Jossey-Bass.

Four Reflective Lenses

1. Our autobiographies as learners and teachers
   - use personal self-reflection (autobiography of our teaching ideas, beliefs and attitudes)
   - can begin to test the accuracy and validity of our beliefs, values and attitudes through conversations with students, peers and other resources such as books

2. Our students' eyes
   - looking at how our students see us
   - will confirm if students are able to understand what we are intending for them to learn

3. Our colleagues' experiences
   - have a colleague observe your teaching – gives you insight to something you might not see in yourself

4. Theoretical literature
   - provides multiple interpretations of familiar situations
   - help us understand and affirm our experiences by naming it in different ways

Adapted from:
Brookfield, S. D. (1995). *Becoming a critically reflective teacher*. San Francisco, CA: Jossey-Bass

Becoming a reflective teacher
means asking yourself .....

➢ What was the moment(s) this week when I felt most connected, engaged or
      affirmed as a teacher – when I said to myself, "This is what being a teacher is
      really all about"? Explain in detail.

➢ What was the moment(s) this week when I felt most disconnected, disengaged or
      bored as a teacher – when I said to myself, "I'm just going through the
      motions here"? Explain in detail.

➢ What was the situation that caused me the greatest anxiety or distress this week –
      the one that I said to myself, "I don't want to go through this again for a
      while"? Explain in detail.

➢ What was the event that most took me by surprise – where I saw or did something
      that shook me up, caught me off guard, knocked me off my stride, gave me a
      jolt, or made me unexpectedly happy? Explain in detail.

➢ What action that anyone (teacher or student) took in class this week did you find
      the most affirming and helpful? the most puzzling and confusing?
      Explain in detail.

➢ What is the most important thing that I have I learned this week about myself
      as a teacher? Explain in detail.

➢ Was there a time when I responded incorrectly to a student? showed bias to a
      student? Explain in detail.

➢ How are the students viewing me as a teacher as I take on more responsibility for
      their learning? Explain in detail.

Adapted from:
Brookfield, S. D. (1995). *Becoming a critically reflective teacher.* San Francisco, CA: Jossey-Bass

References

Brookfield, S.D.(1995). *Becoming a critically reflective teacher*. San Francisco, CA: Jossey-Bass.

Dewey, J. (1933). *How we think*. Boston, MA: Houghton Mifflin Company.

Farrell, T. S. C. (2004). *Reflective practice in action*. Thousand Oaks, CA: Corwin Press.

Larrivee, B. (2006). *An educator's guide to teacher reflection*. Boston, MA: Houghton Mifflin Company.

Zeichner, K. M. (1996). *Reflective teaching*. Mahwah, NJ: Lawrence Erlbaun Associates.

APPENDIX F
Small Group Discussion Questions

Small group discussion questions for Reflective Thinking seminar #1:

"It's common sense that teachers who have been working the longest have the best instincts about what students want and what approaches work best. If my own instincts as a novice conflict with what experienced teaches tell me is true, I should put these instincts asked and defer to the wisdom of their experience." (p. 7)

"It's common sense to cut lecturing down to a minimum, since lecturing induces passivity in students and kills critical thinking." (p. 4)

Brooksfield, S. D. (1995). *Becoming a critically reflective teacher.* San Francisco, CA: Jossey-Bass.

Becoming A Reflective Teacher

part II

What does being reflective mean?

Barbara Larrivee (2006): The conscious consideration of the moral and ethical implications and consequences of classroom practices on students (p. 34).

Thomas Farrell (2004): It requires that teachers examine their values and beliefs about teaching and learning so that they can take more responsibility for their actions in the classroom.

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John Dewey (1933): Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends (p9).

Ten Attributes of a Reflective Teacher

1. Reflects on and learns from experience
2. Engages in ongoing inquiry
3. Solicits feedback
4. Remains open to alternative perspectives
5. Assumes responsibility for own learning
6. Takes action to align with new knowledge and understandings
7. Observes self in the process of thinking
8. Is committed to continuous improvement in practice
9. Strives to align behaviors with values and beliefs
10. Seeks to discover what is true

Larrivee, B. (2006). *An educator's guide to teacher reflection.* Boston: Houghton Mifflin Company . p 7-8.

Three Essential Attitudes of the Reflective Teacher

1. Open-mindedness
   - the active desire (willingness) to consider alternative possibilities as they occur
     - ✓ open to other points of view
     - ✓ seeing other points of view as valid
     - ✓ looking for new information

   - to recognize and admit the possibility of error, even in beliefs that we may have
     - ✓ letting go of the need to be right all the time
     - ✓ being able to criticize yourself

     Example: On a test, 90% of the students fail. The reflective (open-minded) teacher will not just assume that the students did not study, but consider that the approach taken to teach the material was lacking

2. Responsibility
- ➢ careful consideration of the consequences of one's actions, especially how they affect the students
  - ✓ leads to responsible action
  - ✓ examine all decision-making from a philosophical framework of teaching and learning
  - ✓ being able to acknowledge that whatever is chosen will impact the students' lives in many ways

3. Wholeheartedness
- ➢ being thoroughly interested in something so that you throw yourself into it with all your heart
  - ✓ having a 'need-to-know' attitude
  - ✓ Having the commitment to seek every opportunity to learn
  - ✓ being able to approach things with the attitude of willingness to learn something new

APPENDIX H

Educational Philosophies Handout

	Perceptions of students	Beliefs about teaching and learning	Understanding of knowledge	What is worth knowing
Perennialism	human nature is constant all students learn and grow in similar ways	teaching is orderly and carefully articulated traditional subjects are emphasized	internalizing wisdom of the ages teacher dispenses knowledge and students absorb	eternal truths learned through studying great books
Progressivism	active, self-motivated learners every student has unique needs and interests	teacher serves as facilitator students learn best from active involvement	knowledge is obtained by students as they interact with people and things students construct knowledge from what they see, hear and do	Information and skills of interest to the student process of knowing more important than product
Essentialist	student motivation frequently comes from teacher students need to be disciplined and work hard to learn	teacher responsible for motivation teacher dispenses knowledge of traditional subjects, students absorb	knowledge comes from memorizing content and internalizing skills of traditional subjects knowledge comes from hard work	traditional academic subjects, plus technology seen as valuable vocational education not encouraged

Existentialism	every student is an individual students should have the freedom to choose and take responsibility for actions	teacher's role is to demonstrate importance of discipline in pursuing academic goals individualized educational experiences promoted	knowledge is discovering who we are as individuals personalized information is needed to make responsible choices in life	individually determined based on life experiences and understanding of the world that which leads to self-discovery and responsible choice
Social Reconstructionism	students are the hope for future growth and change in society capable of changing society if given necessary knowledge and skills	teachers lead by modeling democratic actions and exciting students about the need for social change much of true learning occurs outside the classroom	the information and skills needed to be part of society while working to implement positive change	life skills necessary for serving as successful change agents in society

Perennialism:
- the world is unchanging and permanent
- education should be geared toward helping students learn things that are eternally important like history, music, science, and art
- need to use great works of literature, philosophy, history and sciences as texts
- need to learn how to be an effective communicator
- roots in idealism - truth never changes, ideas that are everlasting should be taught, and principles of knowledge are enduring
- teacher is to be in control of what is learned (direct instruction)
- also called cultural literacy
- student expected to respect the teacher as the leader
- proponents – Plato, Socrates, Mortimer Adler, Allan Bloom, Robert Hutchins, Robert Sternberg

Progressivism:
- education should be considered part of life itself, not preparation for the future – experience centered
- learning is centered on activities that are of interest to the child
- students engage in problem-solving activities in cooperative groups
- student-centered curriculum and integrated curriculum
- constructivism – students learn best when they construct their own knowledge mainly from hands-on interactions with materials and/or people
- students actively participate in planning and implementing classroom management and discipline
- roots in pragmatism – universe is dynamic and evolving, truth is relative
- proponents – John Dewey, Jean Piaget, Lev Vygotsky

Essentialism:
- vital to understand core areas of curriculum such as reading, writing, math, social sciences, sciences, and foreign language, as well as technology and character training.
- not necessary to teach from great books of the past
- organized, rigorous curriculum that challenges students to do their best and learn as much as possible while in school
- ready to change curriculum to meet changes in society
- direct instruction but other methods can be effective
- believe the school system has geared curriculum to average student leaving brightest students with few choices for a quality education
- roots in realism – world of physical objects is ultimate reality that we experience through our senses
- students expected to work hard, follow rules, and allow others to engage in learning
- proponents – Aristotle, William Bagley, B.F. Skinner, Theodore Sizer, Ivan Pavlov

Existentialism:
- to have authentic learning experiences student must be allowed to make choices regarding their goals – individualized curriculum
- students are to make mature decisions and take responsibility for their actions
- students should be given the freedom to choose what they learn and how they learn it, but they are responsible for their choices
- cooperative groups not encouraged
- teacher is to demonstrate/model the value of pursuing academic goals
- discipline comes from within the student
- students are to discover who they are as individuals
- open approach to management and discipline; all students given equal responsibility with teacher to solve conflicts and problems
- proponents –Sartre, Hegel, Soren Kierkegaard, Nel Noddings

Social Reconstructionism:
- schools are one of the best agents for implementing societal changes
- schools are to help society free itself from all forms of discrimination
- see the world as a global village and work to reconstruct society for the betterment of all
- teachers place high value on democracy; understanding social justice and equity issues
- classroom is important place to model democratic ideals
- students explore their own histories as they work to become more sensitive to all histories
- use problem-solving skills approach
- important to have community building and students need skills for effective group action
- proponents – Ivan Illich, Paulo Freire, Immanuel Kant

Educational philosophers:
Johann Comenius –
   saw childhood as a crucial part of human growth and development; wanted schools to be warm, emotionally secure and satisfying environments for children, realized learning is more meaningful when real objects or pictures are introduced in the classroom

Johann Pestalozzi –
   believed school needed to meet the intellectual, moral and physical powers of human nature in an emotionally secure and positive environment; school needed to be homelike in environment

Horace Mann –
    saw the public school (common school at that time) as an agency for bringing
    children of all social, economical and religious classes together; "father of
    America's public education"

Friedrich Froebel –
    founder of Kindergarten; believed play was vital for kindergarten children's
    growth and development, academically and socially; teachers are to observe
    students at play and formulate instruction based on their observations

John Stuart Mill –
    believed in freedom of ideas and thought; the student is to be accepted as an
    individual person with his/her own interests, needs, values and ideas; schools
    should encourage diverse ideas and thinking that are of interest to the individual
    and society

Maria Montessori –
    educational success involves the student and the environment; children should be
    actively engaged in their environment developing at their own pace

Taken and adapted from:

Clabaugh, G. K. & Rozycki, E. G. (1990). *Understanding schools: The foundations of
    education* Chapter 19. New York: Harper Rowe. p. 565-571.

Gutek, G. L. (2005). *Historical and philosophical foundations of education*. Upper
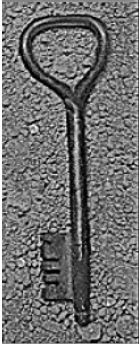   Saddle River, NJ: Pearson Publishing.

Henniger, M. L. & Rose-Duckworth, R. (2002). *The teaching experience* Chapter 11.
    Boston, MA: Pearson Custom Publishing. p. 323-333.

Becoming A
Reflective Teacher
part III

Levels of Reflection

Pre-reflection

➤ knee-jerk reactions in a classroom

➤ attributing problems in the classroom to the
students/others

➤ no attention to students' needs

➤ responses automatic – not based on student response

➤ does not connect classroom situations to other events
or circumstances

➤ believes classroom situations are beyond teacher's
control

➤ beliefs and positions are generalized – not supported
with evidences, theories or research
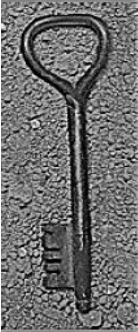
Levels of Reflection

Surface reflection (reflection-in-action)

- ➢ focuses on strategies and methods in the classroom
- ➢ concerned with what works best to maintain order in classroom
- ➢ reasons, values and beliefs not considered
- ➢ technical and descriptive
- ➢ goals are to focused on how to reach predefined objectives for classroom
- ➢ acknowledges need for differentiation
- ➢ teaching practices supported only by experience
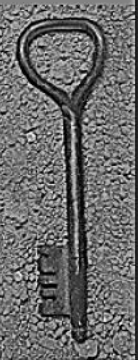
Levels of Reflection

Pedagogical reflection (reflection-on-action)

- ➢ relates strategies used to beliefs
- ➢ strives to understand theoretical basis for instruction
- ➢ strives for consistency between theory and theory-in-use
- ➢ applies various theories, knowledge and research practices
- ➢ up-to-date on current research on quality, best practices
- ➢ focuses on continuous improvement and enhancing student learning
- ➢ teaching positions supported by experience as well as theory and research

Levels of Reflection

Critical reflection (reflection-for-action)

➢ focuses on consequences of classroom practices and actions

➢ examines personal and professional values and beliefs and how it impacts students' learning in the classroom

➢ considers ethical, social and political implications of teaching practices on students

➢ strives to teach/model socially responsible actions

➢ on-going self-reflection about teaching positions as well as thinking processes

➢ consistently questions personal teaching practices for examination and verification
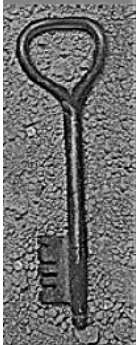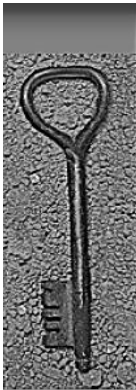
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Farrell, T. S. C. (2004). *Reflective practice in action.* Thousand Oaks, CA: Corwin Press.

Larrivee, B. (2006). *An educator's guide to teaching reflection.* Boston, MA: Houghton Mifflin Company.

Larrivee, B. (2008). Development of a tool to assess teachers' levels of reflective practice. *Reflective Practice, 9*(3), 341-360. Retrieved April 8, 2009 from the Routledge database.
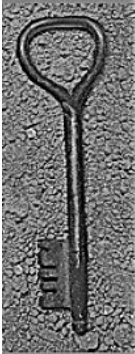
Scenario #1

At the start of the day, Mr. Jones is told that he will have a new student in his class today. Alexis is a ten-year old girl from a rural area in Russia. When Alexis arrives about 9:45, Mr. Jones stops his reading groups to welcome Alexis to the class. When Alexis begins to talk to Mr. Jones, the other students start giggling at her accent and begin making fun of how she is dressed among themselves. Mr. Jones turns and yells at the class, "Quiet! That's not how we treat a new student." Mr. Jones proceeds to assign Alexis a 'buddy' to help her learn the classroom schedule and routine then tells the students to get back to work and he continues with the reading block.
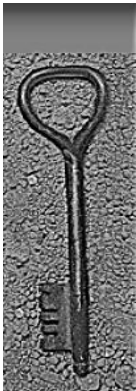
Scenario #2

During lunch, Mr. Jones makes his way to the teachers' lounge where he collapses in the big, comfy chair in the corner. Another teacher asks him what is wrong. Mr. Jones tells the teacher he does not understand his students today – they made fun of his new student, would not get re-focused after she arrived, would not follow the rules, and talked non-stop during the reading block. In fact, when he taught his lesson on adjectives and adverbs, none of them met his objective; they were too busy giggling and making fun of Alexis. As he says this, he thinks that maybe he should have incorporated movements to his lesson since he read somewhere that students do learn better when they are actively involved.

Scenario #3

At this point, Mr. Jones tells his colleague that normally his class is polite and follows the rules regardless of who comes into the class – he has well-trained. As he and his colleague discuss the morning, Mr. Jones realizes that to promote equality and social justice, he should have handled things differently when Alexis arrived. He should have taken the time to explain the various cultural aspects, as well as experiences, Alexis will bring to the classroom. He should have taken time to focus on how the others could help Alexis, as well as how she could help them, instead of rushing to get them back on task.

IRB Approval 738.061109: Reflective Practices of First Semester Preservice Teachers

Institution Review Board

Sent: Thursday, September 24, 2009 2:52 PM
To: Weber, Stephanie; Parker, Karen (School of Education); Garzon, Fernando L.
Cc: Institution Review Board
Attachments: Annual Review Form.doc (29 KB) ; Change in Protocol.doc (29 KB)

Dear Stephanie,

We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. Attached you'll find the forms for those cases.

Thank you for your cooperation with the IRB and we wish you well with your research project. We will be glad to send you a written memo from the Liberty IRB, as needed, upon request.

Sincerely,

Fernando Garzon, Psy.D.
IRB Chair, Liberty University
Center for Counseling and Family Studies Liberty University
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Lynchburg, VA 24502-2269
(434) 592-4054
Fax: (434) 522-0477