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Examining the Significance of Scaffolding on Student Teachers' Written Reflections: A Qualitative Case Study

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EXAMINING THE SIGNIFICANCE OF SCAFFOLDING ON STUDENT TEACHERS' WRITTEN REFLECTIONS: A QUALITATIVE CASE STUDY

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Title: Examining the Significance of Scaffolding on Student Teachers' Written Reflections: A Qualitative Case Study

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The purpose of this study was to examine the impact that questioning and prompting, based on a researcher-developed framework, had on the content and depth of student teachers' written reflection journals. Analysis of student teachers' written reflection journals and interviews with student teachers and cooperating teachers were used to describe the perceptions the participants had surrounding reflection as a professional practice. Smyth's (1989) levels of reflection were used to develop the framework and analyze the data.

A qualitative case study was used to provide a rich description of the perceptions of the student teachers' and the content and depth of their written reflection journals. Four student teacher participants and their four cooperating teachers were used as study participants. The researcher interacted with the participants to provide questioning and prompting for eight weeks of the ten-week study. Data were analyzed at the conclusion of the study.

Results of this study suggested that the support of an experienced professional in the way of providing questioning and prompting was valuable as all of the participants reported that it was helpful in guiding them to reflect more deeply and meaningfully. Overall, participants' reflections became deeper as

the study period progressed, however there was great disparity in the levels of reflection among the different participants. Student teachers had a more limited view of reflection at the beginning of the study as compared to each of their cooperating teachers.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

Background of the Problem

Teacher education programs are designed with the intent of producing teachers ready for the profession and who continuously develop and adapt to meet the needs of an ever-changing body of students. While methods courses include information on educational theories and pedagogical practice, experiences in real classrooms provide pre-service teachers with a deeper understanding of the challenges and rewards that are characteristic of the profession.

In many cases, the culmination of a teacher education program is student teaching, a practical opportunity to apply the concepts learned in methods courses to a teaching experience similar to what may be expected as a teaching professional. In an effort to maximize the effectiveness of this experience, student teaching supervisors often determine requirements and goals to assist the pre-service educators in developing professionally and refining their pedagogical knowledge. Many supervisors do this by asking student teachers to reflect on their experience using some type of reflection journal, in which the pre-service teachers are expected to critically analyze and evaluate their own lessons and make suggestions for future lessons.

Much of the research on reflection, namely critical reflection, supports the idea that in order for a learner to reflect deeply, the process must be taught, guided, or facilitated by another person (Beavers, 2009; Campoy, 2000; Monet &

Etkina, 2008; Pultorak & Barnes, 2009; Williams & Power, 2009). The proposed research study will investigate the use of prompting by a facilitator (researcher) to determine its impact on (a) pre-service teachers' perception of reflection as a professional practice and (b) the level of reflection demonstrated in the participants' written reflection journals.

Mezirow's theory of transformative learning was used to guide and inform the study. The theory explains how adults experience transformative learning, or learning that changed their worldview or belief system. Mezirow (1997) named critical reflection, or examining one's belief systems in relation to his or her actions, as an important factor in the process of transformative learning.

Researchers have identified different levels of reflection that are based on the depth of introspection. Some reflections occur at a description level, which simply re-states the experiences and provides information on the context of the problem (Ricks, 2011). The middle level, or levels, of reflection revolve around the learner identifying the beliefs and theories that guide his or her actions (Svojanovski, 2014), and the deepest level of reflection is called critical reflection, in which the learner is either confirming or changing a previously held worldview based on new experiences (Moore-Russo & Wilsey, 2014).

Statement of the Problem

The amount of knowledge and experiences that a teacher education program needs to provide to pre-service teachers in order to produce highly qualified graduates is vast, making it extremely difficult to accomplish this in the duration of a typical undergraduate education program. Based on this fact,

rather than focusing on preparing candidates to be expert teachers upon graduation, teacher education programs might instead focus on helping pre-service teachers to learn strategies and skills that will help them to continuously develop professionally throughout their entire careers (Hawkins, 1973).

One skill that will help pre-service teachers to develop a habit of career-long learning is critically reflecting upon their practices and experiences (Beavers, 2009; Sarsar, 2008). Teaching is not something that can be easily objectified and defined with a specific formula, but rather it is highly contextualized; therefore, reflection-in-action and reflection-on-action are crucial to teachers improving their practice and should be central to professional development (Gay & Kirkland, 2003). The context of student learning, such as who the students are, what they are learning, and beliefs held by the teacher, is critical to consider. Considering this context is called critical reflection, which is a complex process that must be guided by a facilitator in order to be effective (Gay & Kirkland, 2003; Hoffman-Kipp, Artiles, & Lopez-Torres, 2003; Putman, Smith & Cassady, 2009). Often, student teachers are asked to reflect on their teaching practices, but are not given much direction or facilitation on the actual reflection, and as a result, they simply state the teaching practices that were observed. In order for student teachers to achieve a deeper level of reflection, there must be a social component that includes someone experienced with reflection and education to serve as a facilitator. Roskos, Vukelich, and Risko (2001) made the claim that it is not clear how to help pre-service teachers develop reflective habits, and any type of proven method to improve reflection does not exist.

Purpose of the Study

Teacher education programs intend to prepare teacher candidates to meet the demands of the constantly changing, complex profession of teaching. While many teacher education programs recognize the value of reflection and include it as a component of student teaching and practical field experiences, many times reflection is without much guidance or facilitation. Research supports the use of facilitated prompting to encourage value and higher levels of reflection among student teachers (Dahl & Eriksen, 2015; Rodgers, 2002; Stevenson & Cain, 2013; Yarosz & Fountain, 2004).

The purpose of the study is to (1) investigate the effects of guidance or prompting in the levels of reflection the student teachers are able to achieve in written reflection journals, and also to (2) investigate the impact on the teacher candidates' values of reflection as a professional practice. The researcher provided prompting through the use of comments and questions to a group of student teachers to lead them through a reflection cycle based on the work of Smyth (1989), who outlined four levels of reflection that typically occurred in order and increasing complexity. The learner progressed through the stages of describing (giving details about the event), informing (formulating theories), confronting (questioning theories), and reconstructing (developing new theories or changing existing ones). In Smyth's work, these levels were used to describe how critical reflection occurred.

The researcher analyzed the levels of reflection achieved and the effects of the prompting on student teachers' perceptions surrounding the act of

reflection. The information gathered will be useful to student teaching supervisors and teacher education program development to increase their understanding of guiding student teachers to effective and deeper levels of reflection.

Research Questions

The following research questions guided the study:

1. What type of reflection do student teachers produce in written reflection journals when they have received instructor scaffolding?
    a. What is the focus of participants' reflections in their written reflection journal during their student teaching placement?
    b. What levels of reflection are participants able to achieve in their written reflection journals during their student teaching placement?
2. How does the use of scaffolding in a written reflection journal influence student teachers' perceptions of reflection as a professional practice?
3. What are the perceptions of cooperating teachers regarding reflection as a professional practice?

Significance of the Study

Many state and national teaching standards include a component on using reflective thinking to evaluate one's teaching practice and inform future decisions regarding teaching pedagogy and students' learning. The Council for the Accreditation of Educator Preparation (CAEP) requires teacher candidates to be proficient in the inTASC Learning Progressions for Teachers. Within these learning progressions, Standard 9e states that, "The teacher reflects on his/her

personal biases and accesses resources to deepen his/her own understanding of cultural, ethnic, gender, and learning differences to build stronger relationships and create more relevant learning experiences" (InTASC Model Core Teaching Standards and Learning Progressions for Teachers 1.0, p. 41). The National Board for Professional Teaching Standards highlights reflection as a necessary cornerstone of effective teaching in Proposition 4. Danielson's (1996) Framework for Effective Teaching includes a standard on reflection under the category of professionalism. Many of these state and national standards are used to evaluate in-service teachers and teacher education programs. The standards also place great value on teachers using reflection to evaluate their own professional learning and guide decisions made for student learning.

The reason that reflection is highlighted in standards repeatedly is that the goal of developing reflection as a professional habit leads to continuous professional learning as a practicing educator (Danielson, 2011). Developing these habits in student teachers will help them to develop reflective habits early on so they make educational decisions based on sound reasoning and use their experiences to transform their learning and practice.

When a teacher is reflective in his or her practice, he or she is more likely to make decisions based on careful considerations, rather than relying on routine action because it is what he/she was told to do or it is what he/she has always done. Being reflective and using these reflections to evaluate one's teaching will lead to a greater likelihood that students are accomplishing the learning objectives set forth by the teacher and the state standards. One of the greatest

determinants of student achievement is effective teaching (Muhammad & Hamid Khan, 2012) and fostering a value of reflection as a professional practice and providing direct instruction on how to make reflection effective will increase teacher effectiveness, thus increasing student achievement.

Research Design

A qualitative design was selected for this study, as it seeks to capture the human experience of receiving support in the form of scaffolding in reflection journals. The research questions are descriptive in nature and are designed to explore participants' understanding of reflection as a professional practice, as well as the significance that reflective prompting had on their student teaching experience. The study is designed as a qualitative case study because the participants will be from one teacher education program in central Pennsylvania. The meaning these participants make will not be generalizable to the rest of the population, so this study instead seeks to examine the value of reflection on a small group of student teachers with the goal of providing insight to inform future research studies and inform professional practice. Instead, transferability is expected, so that the readers may transfer the findings of the study to whatever situation or context they feel is applicable.

Semi-structured interviews were conducted with the student teacher participants as a second method of data collection to answer the first research question, along with document analysis. The semi-structured interviews followed an interview protocol, but allowed for the researcher to ask further clarifying questions or expand upon ideas shared by the student teachers. Through

interviews, the researcher sought to understand the perceptions of student teachers regarding the impacts of weekly prompting in their reflection journals and the value that they place on reflection as a professional practice as a result of being guided through a weekly reflection cycle.

Observation of artifacts was used as another method of data collection. An analysis of the written reflection journals that student teachers produce will be used to determine the levels of reflection that the pre-service teachers were able to achieve after receiving the prompting. The researcher drew themes from the levels of reflection achieved by the student teacher participants.

Assumptions and Limitations

Due to the nature of the qualitative case study, the sample of participants is relatively small and specific to one teacher education program in a specific location. The student teachers' value of reflection and levels of pedagogical knowledge may be a direct result of the courses and programming included in the design of the teacher preparation provided by the university. Based on these limitations, the perceptions of the student teachers cannot be generalized to a larger population, but instead can only be used to describe the perceptions and values of the participants that were involved in the study, or the results must be transferred to other contexts as the reader of the research sees fit based on his/her understanding of the results. Additional research will need to be conducted to determine if other student teachers have a similar response to facilitated written reflections.

Despite the similarities in the education of teacher candidates enrolled in the same teacher preparation program, each student teaching experience is very unique because of the knowledge and personality of the cooperating teacher and the relationship between the cooperating teacher and the student teacher. Differences in value of reflection as a professional practice or the levels of written reflection that student teachers are able to achieve may not be a result of the facilitated prompting, but rather the experience provided by the cooperating teacher. This will be clearly differentiated in the interviews and the discussion.

The importance of the study is based on the assumption that being a reflective educator makes a person a better teacher, thus leading to greater student achievement. While the importance of reflective practice is demonstrated in the accreditation and evaluation guidelines at a national level, research is scarce on providing a direct link between reflective teachers and effective instruction. The entire study is based on the assumptions and ideas of many theories regarding reflection and its implications for experiential learning.

Definitions of Terms

For the purposes of this study, the following operational definitions of the terms will be used:

- critical reflection – reflection that challenges professional assumptions and values, rather than reinforcing existing patterns of behavior (Harris, Bruster, Peterson & Shutt, 2010).
- prompting – questions/guidance provided by the researcher to the participant in order to assist him/her in thoughtfully considering his/her

experiences and using the experiences to inform future decisions (Wilson, Perry, Anderson, & Grosshandler, 2012).

- reflection – a mental process that involves considering experiences, trying to make sense of a situation and using the knowledge to inform future decisions. This practice often leads to change in a behavior or confirmation of an existing practice (Harris et al., 2010).
- reflection-in-action – reflective thought that happens in the middle of an experience, thus changing the individual's course of action for the rest of the experience (Schon, 1983)
- reflection-on-action – reflection that is done after an experience with the goal of looking back to make sense of the experience and using the knowledge to inform future experiences (Schon, 1983).
- scaffolding – support from someone who is more experienced that is designed to help improve a learner's performance. This support can include questioning, accommodations, and modeling. The level of support is changed depending on what the learner needs to be successful in the task (Vygotsky, 1987).
- written reflection journal – a written record of personal experiences and the thoughts and feelings that surround them (Chabon & Lee-Wilkerson, 2006)

Expected Findings

The literature on critical reflection states that in order for learners, especially novice learners, to critically reflect on teaching practices effectively, it

should be done with facilitation and guidance. Individuals should not just be expected to be able to reflect at a deep level, but rather be taught and guided through the process (Connell, 2014; Harris et al., 2010; Moussa-Inaty, 2015; Rodgers, 2002; Stevenson & Gain, 2013). Based on this fact, the expected outcome of the study will be that student teachers will value reflection more as a result of participating in the weekly journal reflection prompting. They may feel as though their reflections are more productive, and thus find more meaning in completing them and continuing to reflect as a professional practice.

Concerning the second research question, student teachers will likely be able to achieve levels of deeper reflection at the end of their experience of guided reflection. The journal entries may contain critical reflection, along with description. Because the student teachers will be led through this process multiple times, moving from description to evaluation to integration, it is likely that they will become habitual in this process.

Summary

Written reflection journals are currently used in teacher education programs to encourage pre-service teachers to think deeply about their belief systems and pedagogical methods. Criticisms with this process are that there is not enough guidance or facilitation in order to expect inexperienced teacher candidates to reflect critically and that there is a lack of clarity surrounding what reflection is and how to best encourage it. The proposed study sought to examine the significance of instructor-provided scaffolding on pre-service

teachers' levels of written reflections and perceptions surrounding reflection as a professional practice. The study used a qualitative case study design.

The remainder of the study was organized within chapters. Chapter two reviews the literature surrounding reflection, critical reflection, and levels of reflection to provide necessary background information and grounding for the study, as well as highlight the importance and significance of it. Chapter three provides details about the methodology, materials, and process of the study. Chapter four reports the results, and chapter five discusses implications for future research and professional practice as a result of the findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Reflection is not a new concept in educational philosophy and research, but rather one that has been discussed for decades. As early as the beginning of the twentieth century, educational theorists recognized the value of reflection and its benefits as a professional practice. Since then, the ideas of what reflection is, models of various levels of reflection, the benefits of reflection, and the methods for effective reflection have been investigated and refined further. While no consensus on a definition of reflection or how it is best used has been reached, there are many themes and similarities across the various theories and seminal works.

Effective application of reflection as a professional practice requires an understanding of theories related to reflection. As such, this literature review will begin with a review of major relevant educational and learning theories related to reflection. Following that, research on reflection as a professional practice for educators will be presented. Next, studies on the use of written reflection journals will be synthesized, including information on the benefits, cautions, and effective uses of them. Next, research will be summarized on the various viewpoints and models of levels of reflection. Finally, research that describes the levels of reflection and the use of scaffolding in written reflection journals in teacher education programs will be reported. A summary of related research studies used in the literature review is included as a table in Appendix F.

Relevant Educational Theories

John Dewey and Reflective Thought

John Dewey, an educational philosopher of the early twentieth century, published works that established many ideas regarding reflection as a meaning-making process that results in learning. Dewey believed that humans have a desire to create, experiment, and use their experiences to test assumptions because unless they make meaning from them, experiences are not of value (Clara, 2015). Dewey differentiated between types of thinking, with reflection being a type that requires careful, planned, deliberate thought (Dimova & Kamarska, 2015; Rodgers, 2002). Dewey referred to some experiences as educative experiences, which resulted in a form of learning. These educative experiences allowed individuals to construct and to reconstruct meaning in order to form new knowledge and inform future decisions. This careful consideration of a problem and the inquiry-based, emotional process is what Dewey names as reflection. Dewey suggested that this is a systematic, rigorous method of thinking that involves inference and observation (Clara, 2015). Without this type of reflective thinking about an experience, people could not make meaning from it thus the experience would not be valuable (Rodgers, 2002). Dewey (1916) wrote that the best indicator of a quality teacher is her ability to notice and respond to her students by the signs they exhibit and respond to them in a meaningful way. He stressed the importance of reflective thinking in teachers as many of the problems cannot be solved by technical solutions alone.

Dewey's work on reflective thinking outlined many phases or aspects of reflection but did not describe it in a linear or sequential fashion because that is not how it was believed to occur (Clara, 2015). According to Dewey, some type of problematic experience served as a catalyst for reflective thought. The experience most likely was the one in which the learner was involved, rather than one in which the learner was simply told. Once information was gathered from an experience, the individual used this information to form a theory or hypothesis to explain the situation. The next phases consisted of testing this theory against future experiences. When engaging in this type of thought, humans were constantly drawing meaning from their experiences and refining and reorganizing their knowledge and theories on how the world works (Rodgers, 2002).

While the concept of reflection could be explained and/or taught to another person, actual reflection required a set of attitudes or beliefs in a person. A learner must approach a situation with open-mindedness, directedness, and responsibility for improvement in order to be ready to engage in reflection in a purposeful way (Rodgers, 2002).

Donald Schon: Reflective Practice and Practitioner

Donald Schon (1987) applied Dewey's thoughts about reflection and learning specifically to the art of teaching and wrote on the importance of equipping teachers to be "reflective practitioners." Schon (1987) claimed that technical knowledge and problem solving in the field of education is not enough to solve the complex, ever-changing problems that teaching presents. According to his theory, learning from experiences required deliberate, intentional thought.

Schon did not seek to prescribe the way in which professionals should think about their experiences, but rather described how these processes work (Clara, 2015).

Schon (1987) explained a cyclical process of learning from experiences that began with a type of incoherent situation or an uncertain event that created confusion in the learner (Clara, 2015; Ricks, 2011; Shapiro, 2010). The process continued with engaging in reflection to make sense of the problem that has no clear technical solution (Dahl & Eriksen, 2015). This problem identification and subsequent testing were called framing and reframing, whereby the learner developed and tested possible theories in his/her attempt to understand a situation (Ricks, 2011). Through reflection, the learner contemplated the discrepancy between his/her espoused theories, what he/she believed to be true, and his/her theories in use, the ones that his/her actions demonstrated (Giaimo-Ballard & Hyatt, 2012). This contemplation then led to a cycle in which the learner reframed the previous problems and continued on with hypothesis testing. It was only through the art of reflection, looking at experiences and events through the perspective of someone else, that the learner was able to make sense of the experience (Swanwick et al., 2014).

Schon (1987) described two types of reflective thought: reflection-in-action and reflection-on-action. Reflection-in-action could be understood as the reflection that occurs during an actual experience, the type of in-the-moment thinking and reflecting that many professionals apply to inform their reaction to an unfolding situation (Dimova & Kamarska, 2015). In contrast, reflection-on-action

is a reflective thought process that occurs after an event that caused confusion takes place. He believed that learners brought knowledge from previous experiences to their conscious thought and began to think about what they may do if the situation were to occur in the future (Singh & Mabasa, 2015). This decision incorporated new knowledge gained from the previous experience and helped to inform future actions (Giaimo-Ballard & Hyatt, 2012).

Schon believed that professionals needed to employ reflective practice in order to be able to confront complex situations within teaching. Through this process of reflective thought, Schon believed practitioners were able to validate the knowledge they had gained from practice and experience (Giaimo-Ballard & Hyatt, 2012).

David Kolb: Theory of Experiential Learning

David Kolb's (1984) theory of experiential learning explained the way that adults learned from their experiences through a cycle of careful thought. The theory of experiential learning was portrayed as a spiral and rested on six principles. It assumed that learning is a process that required some type of feedback, and that learning occurred along with re-learning, which meant refining knowledge and ideas. Conflict drove the learning, as conflicting ideas prompted the reflection cycle to occur. Learning required more than just cognition; it required thoughts, feelings, and behaviors. Adult learning occurred with transactions between an individual and his/her environment, and was viewed as constructive in nature (Kolb & Kolb, 2005).

The theory was described as a four-stage cycle that included the processes of having a concrete experience, abstract conceptualization, reflection, and active experimentation. By engaging in all of these processes, the learner was able to reconstruct and refine his or her knowledge based on new experiences (Porntaweekul, Raksasataya & Nethanomsak, 2015). Kayes (2002) described two separate dimensions within the cycle that each contained some sort of tension to be resolved by the learner. The acquisition dimension was when the learner moved from a concrete experience to an abstract conceptualization that applied the experience to broader thoughts and ideas. The transformation dimension was when the learner resolved the conflict between their reflective observations and active experimentation. The implications that were formed from the cycle then served as a beginning point for new experiences (Kolb & Kolb, 2005).

It was believed that learners were able to enter the cycle of experiential learning at any stage, but progress through each of the stages sequentially. Reflective thought was the stage that individuals were able to make sense of their experiences and construct and/or reconstruct their knowledge by taking an active rather than a passive role in their learning (Porntaweekul et al., 2015).

Mezirow: Transformative Theory of Learning

Through his study of adult learners, Jack Mezirow developed the Transformative Theory of Learning. Mezirow (1997) posited that adults came to any new experience with a set of expectations, beliefs, and assumptions that were built by their previous experiences. When adults experienced something

that did not fit into their previously conceived worldview, an uncomfortable period existed with the possibility for transformative learning to occur (Malkki, 2010; Snyder, 2012). Mezirow wrote that there are other types of learning, but transformative learning enabled adults to change their views, and often their actions as the result of an experience (Brock, 2010). Transformative learning occurred when the adult learner either elaborated on his/her current views and beliefs, learned and developed new frames of reference, changed a point of view that he/she previously held, or changed his/her habits of mind (Brock, 2010). The theory of transformative learning outlined a list of conditions that should be met in order to encourage transformative learning in adults.

The ten phases that were outlined may not be understood by the learner and can be progressed through in a cyclical and nonlinear manner (McComish & Parsons, 2013). The phases of transformative learning included a disorienting dilemma that set the stage for a transformation of a worldview, self-examination, critical reflection and developing and acting on a new course of action. Mezirow acknowledged that critical reflection is one of the most important steps to engage in any type of transformative learning. Being able to compare experiences in the current setting against previously held worldviews sets the stage for new learning to occur (Brock, 2010).

Mezirow understood that adults learn differently from children and developed the Theory of Transformative Learning to explain ways in which adults' experiences affected and sometimes dictated their new learning

experiences. Transformative learning experiences enabled the learner to allow experiences to develop into deeper levels of learning and a new way of acting.

Progression of Theory/Thought Related to Reflection

While major theorists were unable to agree on a consistent definition of reflection or critical reflection, many theories of learning were consistent in stating its beneficial nature by acting as the step between an experience and the meaning a learner takes from that experience. Theorists also agreed on the benefits of reflection as a professional practice and the idea that it has the power to transform actions and help the professional to refine his/her thoughts and actions, which guides his/her future practice.

Critical reflection differs from other types of reflection because it involves the learner calling into question some previously held beliefs, values, experiences, and/or assumptions (McComish & Parsons, 2013). Critical reflection has the potential to challenge previously held beliefs and allow opportunities for transformational learning to occur. This type of learning allows the practitioner to develop a broader knowledge base and new patterns of behavior that can be applied to his/her teaching craft (Snyder, 2012). Consistently throughout many of the seminal works, reflection was described as a complex, purposeful, deliberate process for the learner.

Reflection to Improve Professionalism in Teachers

Reflection as a professional practice appears in many of the state and national teaching standards because of its perceived role in teacher effectiveness. The National Board for Professional Teaching Standards

(Proposition 4), the Council for Accreditation of Educator Preparation (in TASC Standard 9) and Danielson's Framework for Teaching (Domain 4) all include reflection as a marker of teacher quality on which teachers are evaluated. Darling-Hammond and Reeves (2010) believed that the best way of building capacity with in-service teachers was to assist them in engaging in personal reflection surrounding their teaching. This practice then gave them the ability to develop new knowledge based on additional experiences and also fostered the ability to challenge their previously conceived thoughts.

Farrell (2015) found that the point of teacher reflection, in many professional development opportunities, was to help teachers realize if what they believe is what they were practicing. Engaging in reflection helped teachers to bring their belief system to the surface of their thought by talking about those beliefs with others, or writing about those beliefs to themselves. Many beliefs that teachers held about learning originated from their teacher education training program or their experiences as a student or a learner (Richards & Lockhart, 1994). Not all teachers had an understanding of what their own beliefs that informed their behaviors were (Farrell, 2015). Belief systems and practices in teaching were tied closely together and depended on one another (Farrell, 2015).

Marcos, Sanchez, and Tillema (2011) found that collaborative reflection used during professional development for teachers built a collection of strategies that were shared among the group, creating consistency and additional new knowledge for some. Tok and Dolapcioglu (2013) found that in-service teachers who participated in regular reflection engaged in more student-centered learning,

valued feedback from others, verbalized decisions for the future, and were more open to additional professional development.

Coffey (2014) determined that teachers who regularly reflected on their practice were focused more on improving themselves and their teaching practices, which then led to greater teacher quality. Reflection has also been used in professional development as a tool to develop learning communities, and increase self-efficacy among teachers, which led to greater feelings of community and less feelings of isolation (Harris et al., 2010). Based on the cited benefits of reflection as a professional practice for teachers, it is a process that might be used to guide professional development opportunities through the use of scaffolding and guidance. Self-centered reflection within an individual's directed thoughts, collaborative discussion reflection, and written reflection are all methods that have been used to encourage reflection with teachers.

Use of Written Reflection Journals

Reflection occurs within three general categories: written, verbal, and self-reflection. Within the mode of written reflection, a popular method is to keep a record of reflections or a journal. The meaning of the term "journal" varies based on the purpose of the written record but allows for one to write in order to explore a particular concept or experience. Some people use the term to describe personal memories, reactions to events or dialogues, to keep a log on learning, to record reactions to research, or to communicate with a team of learners (Dyment & O'Connell, 2014; Reinertsen & Wells, 1993). Chabon and Lee-Wilkerson (2006) delineate among a diary, which was written spontaneously and

free of guidelines; a log, which was a written record of specific events and assumed an objective tone; and a journal, which was a combination of personal reflections and observations about experiences. For the purpose of this research study, a written journal will be defined as a place for individuals to record their thoughts on experiences and theory, and connections between their assumptions and beliefs and teaching practice (Dyment & O'Connell, 2014).

Benefits of Written Reflection Journals

Numerous benefits to having teacher education students keep a written reflection journal have been cited in the literature. Keeping a written record of one's thoughts and reactions to an experience provided a vehicle for learners to critically reflect on their own practice (Chabon & Lee-Wilkerson, 2006). Recording thoughts in a journal, as opposed to self-reflective thought alone, held learners accountable for engaging in purposeful reflection (Boden, Cook, Lasker-Scott, Moore, & Shelton, 2006). Engaging in written reflection moved learners from a passive state of learning to taking an active role by encouraging self-directed learning and enabling the learners to think more critically about their experiences (Hooey & Bailey, 2005; Walker, 2006). Teacher education students reported feeling more open-minded as a result of writing in a scaffolded written reflection journal (Dahl & Eriksen, 2015). Journals could be a method of encouraging risk-taking in learners, as they are able to explore their thoughts in a safe, risk-free environment, as long as conditions for this to occur were met (Walker, 2006). Written reflection journals allowed for individuals to experiment and practice with what they know and what they must learn, which often was, in

large part, specialized language and vocabulary within their field (Hooey & Bailey, 2005). Teacher candidates explored connections between theory that was learned in class and professional practice. Through this exploration and experimentation, they began to form personal values, beliefs, and thought processes relating to teaching and learning (Dahl & Eriksen, 2015).

Written reflection journals provide a place that maintained a record of a learner's evolving thoughts and a record of experiences that he/she can refer back to and relate to new learning experiences, in a way that would not be possible with self-reflection alone (Boden et al., 2006; Chabon & Lee-Wilkerson, 2006). Having the opportunity to revisit previous experiences allows the learner to develop new perspectives that may have an impact on future actions (Walker, 2006). Learners were able to use this trail of thoughts and experiences to consider multiple perspectives on an event and revisit previous experiences and become aware of any personal biases they may have held (Reinertsen & Wells, 1993). A written record allowed for individuals to continuously revisit teaching situations and remember their thought processes associated with each experience in order to understand them better and use the situation to guide future decision-making (Mariko, 2011).

Building trust, both within teaching relationships and within the learner's own pedagogical ability, was a cited benefit of keeping a written reflection journal. Walker (2006) found that teacher education students reported an increase in trust with faculty members with whom they shared the journals and an increased self-confidence and trust in their own ability to make valid

instructional decisions as a direct result of maintaining a written reflection journal. Because a written journal was a direct line of communication between a faculty member and a student, supervisors were able to get a clearer understanding of the learner's experiences and their belief systems and knowledge base, especially if the learner is keeping a journal that moves beyond the level of description (Moussa-Inaty, 2015).

Disadvantages/Cautions of Written Reflection Journals

Cited benefits of keeping written records of reflection in the form of journals were only realized if certain conditions were met surrounding the expectations and process of using the journals. There are common barriers to effective use of written reflection journals in teacher education. Dyment and O'Connell (2014) described the challenge of requiring novice teachers to reflect, as they may not possess the advanced writing or reflection skills to make it a valuable use of time. Also cited was the insufficient amount of experience that novice teachers possess, which instead often turned the reflection journal into a mere description of events. Challenges such as these resulted in student teachers not producing the quality of reflection within the written journals that instructors were expecting for meaningful learning (Dyment & O'Connell, 2014).

An additional barrier was the limited amount of time for teaching professionals and student teachers alike, which often resulted in student teachers finishing a reflective journal assignment quickly and without a lot of thought (Greiman & Covington, 2007). Depending on the context surrounding the use of written reflection journals, pre-service teachers might not have felt

comfortable taking risks within their reflections, which is required in order to achieve the critical level of reflection within the journals (Greiman & Covington, 2007). Lack of guidelines or knowledge of what is expected or a teacher candidate being concerned about risk taking or confidentiality was also a barrier to productive use of reflection journals (Dyment & O'Connell, 2014).

Student/Faculty Perceptions of Written Reflection Journals

A number of studies have been done to identify faculty and student techer perceptions of the use of written reflection journals. Some student teachers reported that they felt that reflection was used within their teacher education program simply as a routine practice, rather than a purposeful activity (Singh & Mabasa, 2015). Student teachers also reported that open or free journal writing was a waste of their time during the busy student teaching practicum because they were not sure on what to reflect (Mariko, 2011). In a study done by Khan, Fazal, and Amin (2014), professors identified evaluation forms, writing journals, and assignments as helpful tools in developing reflection within teacher education students, but the students were not in agreement with that statement. Instead, they reported feeling uncomfortable with a journal that did not have a structure or appropriate guidelines and that they felt as though it was not a confidential or safe place to be open and honest (Dyment & O'Connell, 2014).

Teacher education students identified the required use of written reflection journals within their teacher education program as something that helped them to develop critical thinking skills and that they felt that the qualities of their reflections had become more insightful after additional time was spent writing

(Hooey & Bailey, 2005). When professors or an experienced teacher provided guiding questions, student teachers felt as though they were not able to choose meaningful moments and how to reflect, and as a result did not become more open-minded (Dahl & Eriksen, 2015; Mariko, 2011). Singh and Mabasa (2015) found that ninety-two percent of interviewed student teacher participants identified reflection as an important part of lesson planning and evaluation, even though it was a time consuming process. They reported focus for making future instructional decisions (Singh & Mabasa, 2015), shaping of their thoughts and values and sharpening of a teaching awareness, and a connection between theory and practice as results of keeping the written reflection journal (Dahl & Eriksen, 2015).

Mariko (2011) found that student teachers desired more specific instruction relating to the process of reflection and instruction on how to engage in meaningful written reflection during their college courses. Student teachers who had some form of guidance or facilitation during the written reflection journal process reported that they felt an increased sense of cooperation with their supervisors (Stevenson & Cain, 2013).

Effective Use of Written Reflection Journals in Teacher Education

When used effectively, written reflection journals had the potential to be powerful tools for professional development by allowing pre-service teachers to examine their experiences, thoughts, and observations in a deeper and more meaningful way (Mariko, 2011). Dahl and Eriksen (2015) interviewed teacher education candidates who described how participating in a form of guided written

reflection helped them to be more aware of situations and what specific events to focus on when considering the large domain of knowledge required for effective teaching.

Some teacher education programs have used wikis or another type of online collaboration tool as a possibility to encourage thoughtful reflection on teaching among the student teachers. Because the written content on a wiki is never viewed as finished, but rather ongoing, reflection is viewed as more of a process rather than a product when it was required in this way (Harris et al., 2010). The interactive and collaborative nature of an online wiki promotes discussion and dialogue between individuals, which is thought to promote deeper levels of reflection (Harris et al., 2010). In an analysis of written reflective journals using a wiki as a platform, it was found that the use of the wiki positively impacted pre-service teachers in the areas of problem solving, synthesizing and evaluating of their own practices and thoughts, levels of questioning, responding to one another's work, and observing an instance or experience deeply before applying judgment (Yarosz & Fountain, 2004).

Some obstacles to effective reflection in teacher education include a lack of patience to develop reflection skills, difficulty with time management, a fear of risk-taking or vulnerability, and improper structure of the assignment, which led to confusion (Rodgers, 2002). When these barriers existed, thoughtful reflection did not occur. Teacher education students who did not employ some type of thoughtful reflection were guided by routine actions, rather than considerations about context and learning (Harris et al., 2010). Student teachers who engaged

in deeper levels of reflection were more likely to experience a change in thinking or behavior.

Levels of Reflection

Across the literature on reflection, various theorists and writers delineate among different levels of reflection. All models include some basic level of reflection and progress to more complex reflection that analyzes events and considers multiple viewpoints (Dyment & O'Connell, 2014). Some models suggest that the deeper levels of reflection are more beneficial and the progression is hierarchical in nature (Smyth, 1989), while others describe it as more of a recursive process with all levels being of equal importance (Dyment & O'Connell, 2014). Most models described similar ideas on the most basic level of reflection, description, and also on the most complex or deepest level of reflection, critical reflection. However, these models varied in identifying what occurs at the levels between the two extremes. In the following sections, the literature on the descriptive level of reflection will be outlined, then various ideas on the middle levels of reflection will be presented, and finally the research on critical reflection will be reported.

Description Level of Reflection

Many of the models or frameworks that described levels of reflection began with a level of description or observation of an event (Moore-Russo & Wilsey, 2014). Moussa-Inaty (2015) described this stage of reflection as a mere reporting of events. The written work reads as a log of experiences that the individual had with little or no connections to other ideas or existing thoughts and

belief systems. Juklova (2015) found that, through an analysis of written reflection journals, without much additional guidance, scaffolding, or support, many student teachers tended to remain in this level of reflection for the majority of their writing. This description either listed events, or described one incident, but failed to connect it to previous or past experiences, theories, or beliefs (Ricks, 2011).

Other Levels of Reflection Included in Frameworks

While different frameworks or models have different ways of describing the levels of reflection between description and critical reflection, most of them described some type of interpretation or evaluation of an event. Fry, Klages, and Venneman (2013) used the Pedagogical Model of Inquiry to evaluate levels of reflection in student teacher's journal entries. This model included the levels (a) introspective inquiry phase, in which the individual recounted and organized previous experiences; (b) didactic phase, in which the individual identified effective pedagogical practices; and (c) evaluative inquiry phase, in which the learner analyzed and/or provided support for the decisions he/she has made in the classroom.

Early theorists on reflection defined levels of reflection using different terms, but there were consistent themes across the many models. Dewey (1933) named three levels that individuals progressed through when reflecting. The first stage was identifying a problem, the second stage was analyzing that problem, and the third stage was generalizing the qualities, solutions, and meanings of that problem to other circumstances. Van Manen (1977) identified technical

reflection, which meant how the teaching process was being carried out or applying learned knowledge to practice teaching situations. Interpretation, in contrast, moved beyond the technical phase to begin to judge the efficiency of the employed methods of teaching. Svojanovsky (2014) named the levels in the middle phases of reflection as justification and assessment. Similar to Van Manen's model, these levels served to justify and to assess methods of teaching and to evaluate their effectiveness. Coffey (2014) called this level justificatory. Despite the differences in terminology, many of the models included middle levels of reflection that integrated and connected the current experience with previously-held beliefs and experiences.

Critical Reflection

There is no consensus within the literature on one single definition of critical reflection; however, the idea that this is the deepest form of reflection is consistent among theorists. It is widely believed that critical reflection leads to changes in thoughts, behaviors, assumptions, and future actions (Harris et al., 2010).

Some researchers view critical reflection as reflection that deals with the social, political, and cultural realms of teaching (Dinkelman, 1997; Khan, 2014; Khan et al., 2014; Sharma, Phillion & Malewski, 2011). To engage in this level of reflection, one must position oneself and one's teaching within the broader social, cultural, and political context. The individual must not only consider and write about what is happening in his or her own classroom, but also situate this experience within political and cultural constructs and examine how each event

either serves to reinforce existing constructs or questions him or her (Harris et al., 2010). This type of reflection questions the values and goals that education serves (Khan et al., 2014). Khan (2014) posited that an individual cannot be considered a reflective teacher without considering these dimensions.

Others view critical reflection, more simply, as a type of reflection that uses an experience or experiences to call into question previously held beliefs and assumptions and either reinforces such beliefs or changes the individual's thinking (Moore-Russo & Wilsey, 2014). Sharma, Phillion, and Malewski (2011) described critical reflection as a type of systematic inquiry that could be used to deepen an individual's understanding of how his/her own personal knowledge and experiences are related to educational ideas and theories on learning. This type of reflection allows the individual to develop a personal philosophy and take ownership of attitudes and perspectives on teaching and learning. If the reflection did not involve a form of challenge of an individual's beliefs, it tended to reinforce their existing patterns and behaviors (Harris et al., 2010). Buzdar and Ali (2013) highlighted the importance of this type of critical reflection within the profession of teaching because it allowed teachers to identify areas of distorted knowledge and forced them to assess and to re-assess teaching methods they were using to determine their effectiveness. This type of critical reflection often results in a change in belief or a change in future behaviors and transforms one's perspective on an issue or situation (Dyment & O'Connell, 2014).

Criticisms of Critical Reflection in Teacher Education

Some researchers believe that critical reflection may be a more appropriate goal for experienced teachers and those who have had support in learning to be reflective thinkers, therefore, attempts to develop this skill in teacher education students were not realistic (Dinkelman, 1997; Stevenson & Cain, 2013). Dyment and O'Connell (2014) cautioned against the assumption that the stages of deeper reflection were more beneficial than the beginning levels of reflection. These researchers suggested that instructors must pay careful attention to both the developmental levels of their students and also the purpose or goal of the reflective activity that the instructors wish to use. Moore-Russo and Wilsey (2014) argued that we continue to remain free of a true definition of what the highest level of reflection looks like or a system of telling when it has occurred.

Dimensions of Reflection

Along with theories on levels of reflection, the literature presents a number of ideas on different types or dimensions of reflection. Ricks (2011) described incident reflection versus process reflection. Incident reflection is reflection on one particular event with no connection to future ideas, actions, or learning. This type of reflection is passive, compared to process reflection in which the learner connected the separate incidents in order to develop new ideas and meaning. The depth of a written reflection could be analyzed on three different dimensions: it can be analyzed for depth of content, depth of connectedness, and depth of complexity (Moore-Russo & Wilsey, 2014).

In a study of student teachers, Khan (2014) found that the way that many of the student teachers defined reflection was a definition that would fit within the practical or technical dimension of reflection. This dimension of reflection included reflection on topics such as classroom management, the delivery of lessons, behavioral issues, use of school resources, and individual student learning needs. In analyses of student teaching written reflection journals, student teachers often reflected on some sort of problem or issue that they had faced within their teaching, especially application of teaching methods or pedagogy, the learning troubles or behaviors of students, or curricular issues (Mariko, 2011). Student teachers reflected mostly on this dimension because of the lack of development of classroom management skills at this particular point and also because of the fact that this dimension was what they were evaluated and assessed on during the student teaching practicum (Khan et al., 2014). Khan (2014) argued that student teachers should spend time on the technical/practical dimension of reflection to work on developing expertise, but noted that professors tended to have a much broader view of what they believed reflection to be than student teachers typically did.

Productive and Unproductive Reflection

In some studies that have been done on reflection in written journals, researchers classified a thought as either productive or unproductive reflection. This belief varied based on the individual researcher. Moore-Russo and Wilsey (2014) viewed reflection as productive when it considered an experience from multiple perspectives or was critical in nature (something that led to a change in

perspective). This type of reflection was considered productive because it prompted a change in instruction or a new idea or belief. This type of reflection moved beyond the individual situation or experience being considered at the time. Khan (2014) classified both reflection regarding the role of the teacher in education and ideas about a personal philosophy of education as productive reflection. Any time the individual called into question his or her own assumptions to determine if they need to be changed and became aware of his or her preconceptions surrounding an event, productive reflection occurred.

Scaffolding Reflection – Social Nature

Social Nature of Reflection

Reflection was found to be more effective when it occurred with some type of social component (Connell, 2014). Student teachers reported that an "outsider's perspective" was helpful in prompting them to reflect more deeply than they otherwise would have (Stevenson & Cain, 2013). Allowing reflection to be shared allowed teachers to consider additional perspectives and broaden their theories and ideas (Jarvis, Dickerson, Thomas & Graham, 2014). Rodgers (2002) cited three benefits of the social nature of reflection: (a) it validated the importance of an event that may otherwise be thought of as unimportant, (b) it offered various perspectives and thought processes on the same problem, and (c) it provided support to the learners during their process of inquiry. Being responsible to produce reflection that others will read encouraged the learners to put more careful thought into their reflection.

Dialogue was also a catalyst for deep reflection because people had more collective experiences to use to question or interpret the current experience upon which they reflected (Harris et al., 2010). The reciprocal dialogue that happened when reflection occurred in a social setting forced individuals to think and to speak, which are two important change agents for actions and beliefs (Harris et al., 2010). Moussa-Inaty (2015) found that by participating in dialogic reflection, pre-service teachers were more often able to engage in critical reflection.

Support of an Experienced Professional

Having an experienced professional to either facilitate or collaborate on the written reflection journals had many benefits for student teachers. Often, the student teachers were likely to come to a judgment on how or why a situation occurred without considering all possible perspectives, so an experienced facilitator was more effective in fully considering all aspects of a problem or situation (Dahl & Eriksen, 2015). Stevenson and Cain (2013) found that pre-service teachers did not naturally reflect, despite the fact that they had completed assignments designed to foster reflection. The student teachers struggled to generalize this knowledge to their own teaching or reflective situations. A more experienced teacher was able to identify nuances and critical incidents on which the pre-service teacher may experience and otherwise may not have noticed when left on their own (Coffey, 2014). Interactions, through a reflective journal or verbal reflection, between a professional with experience and a novice teacher helped to develop higher-order thinking processes in the student teacher(Harris et al., 2010). As the experienced teacher was aiding in the reflection of the

student teacher, he or she was able to guide the student teacher to notice and respond to increasingly complex aspects of teaching and learning (Coffey, 2014).

Scaffolding Reflection in Teacher Education

Student teaching provides an authentic experience for teacher education candidates to practice reflecting professionally. Many researchers and theorists believed that reflection can and should be taught to students, especially when the goal was to achieve deep levels of reflection (Jones & Jones, 2013; Juklova, 2015; Moussa-Inaty, 2015). This instruction should be embedded within experiences, such as student teaching and coursework, with many varied opportunities to reflect (Garvis & Pendergast, 2015; Jones & Jones, 2013). The teacher educator was named as an important factor when it came to teaching skills that foster reflective thinking in pre-service teachers. Focusing on developing reflective thinking helped student teachers to consider multicultural perspectives when teaching (Sharma et al., 2011), and make connections between theory and practice (Garvis & Pendergast, 2015).

Many methods of scaffolding reflection in teacher education programs have been explored and studied. The use of guiding questions that helped the student teacher focus on a topic before the reflection was found to have a significant improvement in the depth of written reflections (Moussa-Inaty, 2015). Prompts from the teacher educator should have a purpose and should be directed to the student teacher in order to elicit critical reflection (Coffey, 2014). If the facilitator did not guide the student teachers in what to reflect on, their written reflections tended to be very superficial and focus on unimportant events

(Coffey, 2014). If the teacher educator focused student teachers' attention on small critical incidents of teaching, student teachers should be able to analyze and reflect in a deeper way than if they chose the incidents themselves (Coffey, 2014).

The use of questioning and guidance throughout the journal is one method of scaffolding written reflection journals. Dahl and Eriksen (2015) believed that reflection, or the facilitation of it, should be encouraged by open-ended questions, not closed questions, so that the student teacher will consider new ideas. They viewed the facilitator's job as creating an environment of inquiry in which the student teacher felt comfortable and safe to reflect on teaching situations and problems. Fry, Klages, and Venneman (2013) found that when facilitators prompted in an open-ended way, rather than requiring a strict structure, students produced higher levels of reflection. Using instructor-developed questions may have restricted reflections in student teachers or limited them only to negative reflection and caused them to not value the positive experiences they may have had (Harris et al., 2010). Double-entry journals, reflective dialogue journals, visual metaphors, and graphic organizers were all found to be effective methods of guiding student teachers to be reflective (Harris et al., 2010). Cognitive coaching, in which the instructor coached the individuals and provided individualized prompts according to their needs, was identified as a method that has great potential for professional growth (Harris et al., 2010). Student teachers have the potential to develop into expert teachers by learning

how to notice significant classroom events, analyze them, and turn them into teaching strategies (Moore-Russo & Wilsey, 2014).

A close and trusting relationship among student teachers, cooperating teachers, and student teaching supervisors made it more likely that student teachers would engage in deeper reflection (Stevenson & Cain, 2013). Written reflection is an opportunity to invite pre-service teachers to begin to discuss their teaching in a non-threating way (Jarvis et al., 2014). If student teachers find themselves having to defend their teaching philosophy or choices, they are unlikely to move beyond basic levels of reflection or into any vulnerable types of thought. Writing may help student teachers to explore their own defensiveness and begin to realize or change their espoused values. Thus, scaffolding of any nature should find an appropriate balance between challenging students' ideas and supporting them through their learning (Convery, 1998).

Another method of scaffolding was to help student teachers identify a critical incident in which they felt unsuccessful in their teaching and use that as a springboard to move reflection forward. An effective facilitator should identify some taken-for-granted beliefs or assumptions of which the student teacher may not be aware (Christof, 2014).

Scaffolding Framework

For this study, a scaffolding framework by Smyth (1989) as cited in Ajayi (2011) was used. This framework included four levels of critical reflection. The first level was to describe a concrete event; the learner merely told the reader what happened and the context. The next level was to inform. This was where

the student teacher began to examine the principles of teaching that inform how students behave and learn and began to develop some theories on teaching and learning. The third level was confronting, in which the student teacher began to question some of his or her own previously-held values, beliefs and practices. The fourth and final level was reconstructing, in which the learner took a new position about what he or she believed to be true about teaching and described an actionable change. Student teachers were able to be guided through this process through the use of instructor questioning and prompting.

Conclusion

While patterns and themes emerge among the research on the use of written reflection journals in teacher education, there are still areas that are inconsistent, underdeveloped, or unclear. While many researchers have found that social reflection and scaffolding reflection are beneficial to student teachers, there are still some gaps in understanding in how to do that effectively within a teacher education program. Many researchers and teacher educators extol the benefits of facilitating deep, or critical, reflection among student teachers on their professional careers; however, its complex nature creates confusion on the best way for this to occur.

CHAPTER THREE

METHODOLOGY

This qualitative case study examined the impact of scaffolding, based on a researcher-developed reflective framework, on student teachers' levels of reflection shown in their written journals, and their perceptions regarding reflection as a professional practice. Student teacher participants received scaffolding from the researcher in the form of questions and prompts, based on the work of Smyth (1989) in response to entries in written reflection journals that were kept during their student teaching experience. The scaffolding guided student teachers through the cycle of describing the problem, informing, constructing, and finally reconstructing. Written reflection journals were then analyzed to determine the level of reflection the student teacher was able to achieve. Interviews were conducted with participants to determine the impact of the scaffolding on their perceived value of reflection as a professional practice.

This chapter will describe the research design and methodology. The problem and purpose that informed the study will be summarized, followed with a rationale for selecting the chosen research methodology. Next, a description of the sample population will be given and then instrumentation will be described and provided. Procedures for data collection and data analysis will be given with sufficient detail. Lastly, the researcher will provide assumptions and limitations that impact the study.

The results of this study are relevant to teacher education programs, as they illuminate student teacher perceptions surrounding written reflection journals

that were kept as a requirement for student teaching placements, as well as examined the impacts of a particular type of scaffolding that might be helpful in encouraging student teachers to reflect more deeply on their teaching practices.

Problem

Teaching is a complex profession in which teacher candidates face situations where technical knowledge alone is not enough to solve a problem. In order to prepare teacher education students for the reality of the challenges they may face as educators, teacher education programs are tasked with providing a great amount of instruction in a short period of time to prepare pre-service teachers. Often, student teachers also have a limited amount of time in practical experiences and coursework before they are expected to enter the profession ready to effectively facilitate student learning. One solution to make the most of these experiences and extend the learning beyond the time span of the teacher education program is to help student teachers develop expertise by using reflection to learn how to notice, to analyze, and to take action on classroom situations (Moore-Russo & Wilsey, 2014).

In many teacher education programs, reflective practice seems to be widely accepted as beneficial in developing prepared and competent teachers, but there is little agreement on what exactly reflection is and on the best methods to teach students to use it (Ajayi, 2011). Jorgensen (2015) posited that the term "reflective thinking" encompasses so many ideas, it is beginning to lose meaning and many education professionals are lacking a clear idea of what it is.

Based on this lack of agreement, some type of framework or consensus on a clear definition of reflection and how to best help student teachers learn how to critically reflect is needed, at least at the university level. Additional research is needed to determine what type of scaffolding and/or direct teaching of reflection helps student teachers to reflect in a productive way and make meaning from their experiences.

Purpose

Research has shown that both incorporating a social component to reflection (Jarvis et al., 2014) and getting input from an experienced professional (Coffey, 2014) are effective in promoting reflection in pre-service teachers; however, there is a lack of consensus in the research on effective methods to provide this social nature or experienced professional component in teacher education programs. Teacher education programs would benefit from research that examines the impact of various methods of encouraging critical reflection. As a result of this research, teacher education faculty might develop a system for developing student teachers' critical written reflection skills in order to prepare student teachers to engage in ongoing reflection in their professional careers.

The purpose of this qualitative case study was to evaluate the impact of scaffolding, using framework-based, researcher-provided questions and prompts on student teachers' levels of written reflection and their perceptions of reflection as a professional practice. Data were gathered from qualitative interviews and a document analysis of participants' written reflection journals in order to explore the impact the scaffolding had on teacher education students. Results of the

study have the potential to be significant in that the results may be used to inform larger-scale research studies and possible methods for scaffolding critical written reflection in teacher education programs.

Rationale for Methodology

Qualitative research is often based on a constructivist world view. Merriam (2009) defined constructivist beliefs by explaining that there is no one reality that can be discovered by a researcher, but multiple truths and realities constructed by different people. Meanings of any phenomenon or situation are co-constructed by both the participants in the study and the researcher (Hatch, 2002). Researchers should then seek to observe and understand the complex nature of a phenomenon and different viewpoints (Creswell, 2007). Any knowledge that is gained from a study is true of only the context and time that the phenomenon happens (Yin, 2016). As such, it is necessary to include rich contextual detail in the analysis of the research (Hatch, 2002). Hatch (2002) posited that due to the nature of the constructivist paradigm, it is not possible or desirable for the researchers to be distant observers or purely objective in their study. This study investigated the significance that scaffolding had on student teachers' levels of written reflection and their perceptions of reflection as a professional practice, as it related to the meaning they actively constructed within the context of the study. Based on these criteria, a qualitative case study approach was used.

Merriam (2009) identified the researcher's goal in case study research as to uncover information about many factors within the case, and how each of

these factors interact with one another. Within a case study design, the researcher does not intend to separate out the various factors that occur within the context of the phenomenon. This methodology is appropriate for this study because of the highly contextualized nature of the research, in that it was unable to be separated from the student teachers' perceptions surrounding reflection itself. Yin (2008) described case study design as one that examines a phenomenon, as well as the context within which it exists, without separating the two.

A particularistic case study focuses on one particular program or instance. The study of this program, then, became important because of the information that it represented regarding the phenomenon as a whole (Merriam, 2009). Merriam (2009) described this type of case study further as "a good design for practical problems - for questions, situations, puzzling occurrences arising from everyday practice" (Merriam, 2009, p.43).

Stake (1995) described an instrumental case study as one that presents information that is gained from one case, however, the purpose is to inform other cases and situations. Stake viewed this instance of a "case" as a noun, and the unit the researcher studies informs the type of study to be done. Because the case studied was the scaffolding that the participants receive on their written reflection journals, an instrumental case study design was appropriate for the purposes of the study. Multiple participants were a part of the single case studied. Stake (1995) made the claim that knowledge that is gained from case

study research is concrete (relating to the senses), very contextual in nature, and generalized by the readers who have a particular population in mind.

Sample Population

The case of this study was the process of the researcher providing scaffolding based on the framework to the participants who were involved in the research project. Because this research involved examining a type of program, the case was decided as the group of student teachers who were participating in this scaffolding at one college in Pennsylvania. Stake (1995) referred to this as the case being given or decided for the researcher, since they do not need to choose one case out of many possible cases. Merriam (2009) described a case study as a study of a bounded system with limits. She suggested identifying very clearly what the case is and what the case is not. The boundaries of the case studied was individuals who were student teaching, attended a particular college in central Pennsylvania, received the scaffolding from the researcher based on the framework provided, and had similar demographic information to those presented in the case. Results from this study and/or sample were not intended to be generalized to instances outside of this particular case, but instead inform further research and discussion. Instead, transferability is intended, so that the reader is able to make his/her own generalizations about the population he/she chooses with the knowledge that is gained from the study (Stake, 1995). The purpose of the sample chosen was to gather rich information from individuals who have participated in the scaffolding, based on their perceptions. Because of these criteria, a small sample of four participants was selected.

Sampling Procedure

The researcher adhered to the following sampling procedure to ensure trustworthiness while conducting the study.

- First, the researcher gained access to a site for the study by contacting a gatekeeper at one college/university with a teacher education program in central Pennsylvania. The researcher followed the procedures to obtain permission to conduct the study on the site and gain access to a list of possible participants. The researcher obtained IRB approval for the study. Possible participants were those who were completing their student teaching placement in the fall semester of 2016.
- Next, the researcher gave a brief synopsis of the study and participation requirements to all student teachers that were enrolled in the fall semester of 2016. Questions regarding voluntary participation were answered at this time.
- Then, initial contact was made with each participant by mailing him or her a consent form to determine if they were willing to participate in the study. A formal letter was sent to the potential participant, which described the study in detail, along with the requirements, and informed consent was obtained (Appendix F). Four students of the possible seven returned the consent form to the researcher, stating their intent to participate in the study.

- Then, the researcher contacted each cooperating teacher with whom the student teacher participants were placed to determine if he/she would be willing to participate in the study by completing a semi-structured interview. A formal letter was sent to the cooperating teacher that described the study (Appendix E), along with the requirements, and informed consent was obtained. All of the cooperating teachers for the four participants agreed to participate in the study.
- Finally, a contact log was kept as the researcher went through the process of obtaining participants that recorded the initial contact of each participant so that the sampling procedure could be apparent to readers.

Data Collection

To ensure confidentiality, pseudonyms were used throughout the research study for each of the participants. Informed consent was gained, and the participants were told about the purpose of the study and the data collection methods.

Phase One

The researcher conducted a brief (two-question) interview with the participants regarding their current reflection practices (Appendix A). Participants then completed written reflection journals via a researcher-created template on GoogleDocs to fulfill their university-based requirement of journaling once per week. The researcher collected two reflection journal entries that were completed

entirely by the participant, with no prompting or support to determine initial reflection levels. The researcher then interacted with the participants through the use of the framework (described in instrumentation) to provide scaffolding for the reflection on the remaining eight entries, using the comment feature on GoogleDocs. The researcher provided instructions on how to complete the written reflection journals (both orally and written- Appendix D) during the initial meeting and pre-interview with each participant. Any confusion or questions regarding the procedures for the study was answered at this time. The interviews were transcribed and journal entries were printed to be coded and analyzed as is described in the analysis section of this chapter.

Phase Two

After the conclusion of the ten-week research study period, the researcher conducted post-study interviews with each of the participants using the interview protocol (Appendix A) to determine the perceived impact of the scaffolding on the participants' written reflection journals and perceptions regarding reflection as a professional practice. These interviews were transcribed by the researcher and organized and coded descriptively, based on the research questions.

Phase Three

The researcher conducted a semi-structured interview in-person or via telephone with each of the participants' cooperating teachers using the interview protocol (Appendix B) to determine their perception on the type of reflection the student teacher participant has been able to achieve throughout the study.

These interviews were transcribed by the researcher and organized and coded descriptively, based on the research questions.

Instrumentation

Instrumentation for data collection included two interview protocols, one that was used with the student teacher participants, and one that was used with the cooperating teacher participants, as well as a framework, which was used to provide scaffolding in reflection journals during the duration of the study. The researcher developed all instrumentation based on a review of the literature and the research questions.

Interviews

A semi-structured, open-ended interview was conducted with each student teaching participant and his or her respective cooperating teacher. An interview protocol (Appendix A and Appendix B) was used to guide the interviews. A protocol was developed based on a review of the literature and the research questions for the study, however questions were different based on the setting and context of each of the interview participants (Yin, 2016). Interviews were conducted and recorded by phone or video conferencing software. Yin (2016) described qualitative interviews as interviews that aim to understand the terms participants use and the meaning they make from an experience, using their own language. The researcher made a strong effort to understand the meanings of the words and phrases that participants use (Yin, 2016), therefore the researcher in this study asked clarifying and extending questions as she deemed necessary.

A pilot study included five participants who had completed their student teaching placement within the past year to determine the clarity of the questions. The pilot study teacher participants were asked to provide feedback regarding the questions that were developed on the interview protocol. Based on their feedback, the researcher made changes to the interview protocol used with the study's participants. The protocols (Appendices A and B) reflect the changes that were made a result of the pilot study. The participants of the pilot study also piloted the instructions and/or protocol for completing and submitting the written reflection journals via GoogleDocs to determine level of clarity and note any confusion in the written directions.

A pilot study was also conducted with five cooperating teachers who had or previously had student teachers in their classrooms to determine clarity and thoroughness of the questions. The pilot study participants were asked to provide feedback regarding the questions asked of them on the interview protocol. Based on their feedback, the researcher made changes to the interview protocol used with the study's participants. These changes are reflected in the attached interview protocols (Appendices A and B).

Scaffolding Framework

A framework for researcher prompting, or scaffolding, was developed by the researcher based on the work of Smyth (1989). Smyth described sequential stages that occur during critical reflection. The first stage is describing, in which the learner asks, "what happened?" or "what did I do?" Smyth believes that the individual must start with a concrete experience in order to access held theories

and beliefs. The concrete experience should be described in the reflector's own language and words, so he or she does not feel the need to use jargon or write about an event he or she thinks is expected.

The next stage in Smyth's (1989) model is the inform stage. This is the stage in which the individual discovers the theories that he or she acts on each day. At this stage, the reflector investigates what he or she believes to be true that causes him or her to act in the way that he/she does. This allows him/her to begin to identify some pedagogical principles on which he/she is acting.

During the constructing phase of Smyth's model, the learner begins to call into question the theories that he or she uses to inform his or her actions. The reflector begins to discover why he/she believes what he or she does about teaching and learning. An observable behavior during the construction phase of reflection is when an individual can identify how and why he/she came to believe what he/she does, and place this thought within a broader personal or historical context (Smyth, 1989).

The final phase of the reflection process, according to Smyth, is the reconstructing phase. During this stage, the individual begins to question how he/she might do things differently in a similar situation or a different context. Within this stage, the individual begins to question and possibly change the way that things are done and the forces that cause them to be so (Smyth, 1989).

The scaffolding framework (Appendix C) was developed, based on Smyth's stages of reflection in order to provide written prompting, or cues, in order to lead the student teacher to the next stage in reflecting. The framework

includes a description of each stage, and a list of possible prompts that the researcher used to elicit reflection from the next sequential stage on the framework.

Document Analysis

Written reflection journal entries were prepared by the participants in the study to be used for analysis. The researcher created a written reflection journal electronic document template that was used for the participants to record their reflections throughout the student teaching experience. Researcher-generated documents are documents that are prepared for the researcher after the study has already begun (Merriam, 2009). Merriam (2009) named documents as an unobtrusive way to collect data on topics and ideas that participants may otherwise not feel comfortable discussing with a researcher. The template and instructions protocol for the written reflection journal are shown in Appendix D.

Analysis

The process for analyzing the data began during data collection, as Merriam (2009) claimed this is important to ensure enough data are collected. Data analysis was organized and analyzed using two levels of coding. Each of the journal entries and interview transcripts were first descriptively coded, and then analytically coded. The following process for analyzing the qualitative data was used.

1. Organize the data (Creswell, 2007) – Data were gathered during the collection process and put into a useful order for analysis. Interviews were transcribed and labeled with pseudonyms, and journal excerpts were

printed for each research question and organized by participant pseudonym as well. Yin (2016) called this phase compiling the data, in which the researcher put it in a useful order.

2. Read over the data (Creswell, 2007) – The researcher read through all data collected to get a general "feeling" for the content that was depicted and the tone of the data. She recorded memos about initial thoughts and feelings about both the data and field notes (Yin, 2016).
3. Level 1 or Open Coding (Merriam, 2009) – The researcher made descriptive notes on the data that were useful to answering the research questions. The codes were not predetermined, but rather the researcher used words and phrases pulled directly from the participant's words, known as in vivo codes (Saldana, 2013), or descriptive codes, that stick tightly to the content.
4. Analytical Coding (Richards, 2005) –The researcher then grouped descriptive codes that were generated into categories that use participant's constructed meaning, researcher knowledge, and interpretation (Merriam, 2009). Categories were constructed based on the open codes generated to group similar data together.
5. Selective Coding (Merriam, 2009) – Data were given a code that was pre-determined to meet the needs of the research question as: reflector, critical reflector, or non-reflector. These levels of reflectivity are based on a study done by Wong, Kember, Chung, and Yan (1995), in which they used a scheme for initial codes, and then classified each journal entry as

one of three levels based on Mezirow's (1997) model. Statements in each journal entry were coded based on the level of reflection the student teacher demonstrated holistically. The entire journal entry was then given the code of the highest level achieved within the entry. The researcher only identified codes if there was evidence to substantiate the coding decision.

Table 1

Pre-determined Coding Levels of Reflection

Level of Reflection (Code)	**Description:**
Non-reflector	• Descriptive, reports on what happened in the classroom • Could be precise or detailed observations, but didn't make any inferences • Little or no awareness of how the context surrounding the incident impacted the situation • Written in concrete language • Used prescriptive, textbook type language. *Key Words/Phrases Signaling a Non-Reflector Entry: "This lesson was about..", "The students enjoyed…", "The assessment I used was…"*
Reflector	• Related past experiences to new experiences • Noted relationships between knowledge and feelings/situations • Identified that experiences might not fit with old knowledge • Began to call into question previously held beliefs *Key Words/Phrases Signaling a Reflector Entry: "This reminds me of…", "Because I know _____, I understand that _____", "This is confusing to me because…", "I used to think _____, but now I feel that _____"*
Critical Reflector	• Examined themselves individually or the experience in a critical manner • Viewed the situation framed within the context, and were willing to accept/identify multiple perspectives • Suggested changes in practice as a result of new learning, did not rely on habits to inform their actions • Pulled in knowledge from multiple sources (coursework, experiences, etc.) when formulating new theories *Key Words/Phrases Signaling a Critical Reflector Entry: "I realized ___ about myself…", "Because these/this students/student _____, I understand that ____", "Based on this, next time I will _____", "My perspective has changed because of _____"*

6. Develop an array of the data (Yin, 2016) – A visual display of the data was developed in order to interpret/explain the themes/categories or findings of the study.
7. Conclusions will be drawn (Yin, 2016) – The researcher connected the findings to the existing research, which included implications for future research and practical implications.

Assumptions and Limitations

A limitation of the study was the potential for researcher bias. The researcher had previous experience in studying the concept of reflection, and active reflection is a critical component of her profession as an instructional coach. Lincoln and Guba (1985) cited reflexivity as a way to mitigate this limitation, by being reflective about the researcher as a collector of data. By describing her background and experiences with the topic, it will become clearer to the reader of the study how the beliefs of this researcher may have influenced the findings and conclusions of the study.

Based on the very small sample size and case study being conducted at one site, the study was limited to the notion of transferability rather than generalizability. Generalizability could not be assumed, because the context of the study is extremely important and cannot be separated from the findings. Based on this assumption, Lincoln and Guba's (1985) idea of transferability, where the responsibility of application of the findings to new situations lies with the reader, rather than the researcher, is more applicable. Cronbach (1975)

described working hypotheses, which reflects findings within a specific context and not generalizable to a larger population, which was the intent of this study.

Another limitation is the short duration of the study. Ideally, the researcher would collect data throughout a participant's entire teacher education program, in order to see growth in a student's reflection. This study was limited to ten weeks, which might have not been enough time to see a large amount of growth, whereas the scaffolding may have been more significant if it was performed for a longer duration.

The potential benefits of the findings of the study rest on a few assumptions. One such assumption is that deeper reflection is better than description and leads to improved learning and changes in behavior. While many educational theorists tout the benefits of deep or critical reflection, Dyment and O'Connell (2014) have called this belief into question. Another assumption is that the person who was providing the scaffolding has an understanding of reflection and has enough teaching experience to provide the scaffolding in a meaningful way. Finally, the study assumed that the experience that a student teacher received in his or her placement is valuable and/or conducive to reflect on student learning, and that the student teacher himself or herself is the one who completed the written reflections to be analyzed and the reflections were his/her own thoughts.

Procedures for Establishing Trustworthiness

The researcher took precautions to mitigate threats to validity and establish trustworthiness in collecting and analyzing data that accurately

represented the participants' perceptions. Intensive, long-term field involvement (Maxwell, 2013) was completed, with the opportunity to collect multiple pieces of data throughout the participants' student teaching placement. This measure was taken through the collection of ten journal entries per participant over a period of ten weeks. Participants were involved with the study for the duration of their student teaching placement, so that the researcher was able to collect a breadth of data that provided an accurate picture of the students' reflective practices.

The researcher collected "rich data" (Maxwell, 2013) through both the journal entries and also the interviews with the participants and cooperating teachers. In addition, the researcher searched for discrepant evidence and negative cases, by seeking out data and responses that might have contradicted other findings from the study to ensure that the findings reported were true and valid.

The researcher ensured triangulation of data sources, or collected evidence from different sources that helped validate the findings. This occurred through conducting the document analysis of the written reflection journals and the interviews with both the student teaching participants and their cooperating teachers. Providing these three sources of data helped to validate findings for each research question.

Finally, the researcher kept an audit trail (Lincoln & Guba, 1985), a detailed report of the procedure of the study, so that another researcher would be able to replicate the study under different conditions. This allowed readers to understand the manner in which the study was completed and how they might transfer the findings.

Summary

The proposed study investigated the impact of the use of a scaffolding framework on student teachers' written reflection journals and perceptions regarding the use of reflection. A qualitative case study was used in order to provide rich data that encapsulated the experience of receiving the scaffolding within the context, which it existed. Document analysis was used to gather information about the levels of reflection expressed in the written reflection journals and qualitative interviews were used to gather data for the student teachers' and cooperating teachers' perceptions regarding the use of reflection. This research study has noted limitations; however, the researcher has outlined the steps that were taken to ensure trustworthiness of the findings of the study.

CHAPTER FOUR

ANALYSIS OF THE DATA

The purpose of this qualitative case study was to determine the significance of researcher scaffolding on student teachers' written reflection journals with regard to both (a) the depth/level of the reflection and (b) the student teachers' perceptions of the value of reflection as a professional practice. This study also examined the content, or the topics reflected on, in the written reflection journals. Three types of data were collected to inform this study: pre and post interviews with the student teaching participants, interviews with the participants' cooperating teacher, and document analysis of the student teachers' written reflection journals. This chapter includes an analysis of the data that were collected. It presents the relevant data organized by research question and themes.

Analysis of Qualitative Data

Merriam (2009) described analysis of data as a meaning-making process that consists of sifting through data, regrouping and interpreting. The researcher's goal, then, is to find themes or categories that provided answers to the research questions on which the study is based. As data are coded, the researcher often finds themes and categories of data that lead to interpretations. Yin (2016) outlined a process for data analysis that consisted of five steps: compiling data, disassembling data, reassembling data, interpreting, and concluding. Yin describes this as a recursive, rather than linear, process.

Compiling the data consists of arranging the data in an organized way that he/she can easily find units in each data source. Disassembling data means breaking the data apart into chunks or units. According to Lincoln and Guba (1985) a unit of data is the smallest piece of data that could be understood on its own. After the data are broken down into units, these units are then identified as answering a particular research question and then reassembled into categories and themes (Yin, 2016). This process is to occur as the researcher begins to group similar units of data together and identify themes and patterns by constantly comparing the data units to one another. After these are grouped, the researcher then should make interpretations and conclusions based on the themes that emerged with regard to the research questions.

The process of coding the data aids the researcher in finding meaningful connections between and among the data (Merriam, 2009). Merriam (2009) described a process of open coding in which the researcher might use exact words or phrases or words/phrases found in the research to describe the units of data, when no categories are yet developed. Richards (2005) suggested analytic coding as a next step in which the coding then focuses on interpreting data and the development of categories. Yin (2016) called a similar process "category coding."

Throughout the process of analyzing qualitative data, Merriam (2009) suggested that there are both inductive and deductive types of reasoning that should occur. The researcher should identify categories based on data units, and then later deductively find units of data that fit within a particular category.

The researcher should continuously review and make adjustments to categories as the write-up of the findings occurs (Yin, 2016). Finally, the researcher should formulate theories and categories that answer the research questions set for the study.

Case Study of Individual Participants

This section presents the data from the participant interviews, the analysis of the written reflection journals, and the resulting categories and themes that were identified from the data. The next section looks deeper at the individual participants' data with regard to the content of the written reflections, the levels of reflection achieved throughout the written journals, and the participants' perceived value of reflection as a professional practice. The written reflection journals were analyzed for levels of depth as was discussed in Chapter Three. Table 2, included in the section titled "Research Question 2," summarizes the levels of reflection that were used to analyze the written reflection journal data.

Participants were contacted at the beginning of the study in September of 2016 to complete a brief pre-study telephone interview with the researcher. They were given directions for the study in writing, attached as Appendix D, and verbally on the phone. At this time, the researcher answered any questions the student teacher participants had regarding the study. The researcher interacted with the student teaching participants through Google Docs to provide questioning and prompts, using the comment feature. The researcher contacted the cooperating teacher participants to ask for participation and obtained informed consent. At the conclusion of the ten-week study period, the researcher

scheduled telephone interviews with both the student teaching participants and the cooperating teachers in late November and early December of 2016.

For each participant, quotations from interviews and written reflections are included to demonstrate the integrity and authenticity of the data. This means that spelling, grammatical, and typographical errors may be present in the participant quotations. Participants were given a pseudonym (Participant A, Participant B, Participant C, and Participant D) in order to maintain confidentiality throughout the study. Gender-specific pronouns were given to the pseudonyms to further maintain confidentiality. These pseudonyms were used throughout the analysis of individual participants' data as well as the cross-case analysis.

Student Teacher Participants

There were four student teacher participants who attended a central Pennsylvania satellite campus of a university and student taught in the fall of 2016. All of the student teachers included in the study were post-baccalaureate, enrolled in a program for teacher certification. Because of this, the participants took a wide background of courses at the university level. One of the participants previously had another career, and is considered a non-traditional student. Two of the participants were placed in a high school English setting, one of the participants student taught in a middle school social studies setting, and the final participant was placed in a high school mathematics classroom. The student teachers ranged in age from twenty-one to fifty. There were three females and a male. Each of the participants gave permission for the researcher to interact with

them through their written reflection journal and completed both a pre-study and a post-study interview with the researcher by telephone.

The university the participants attended operates under a co-teaching model of student teaching. This program is based on Friend and Cook's (1993) co-teaching model. The student teachers and cooperating teachers were trained in this model together in one or two informational training sessions provided by the university. During these sessions, they received information on co-teaching strategies, methods of co-planning, and the various roles that the teacher and student teacher could assume within the co-teaching model. The philosophy of this model is that the teacher candidate begins teaching immediately, rather than spending time in the classroom simply observing.

Table 2

Student Teacher Participant Demographic Information

Participant	Male/Female	Subject Taught
Participant A	Male	HS English Language Arts
Participant B	Female	HS Social Studies
Participant C	Female	MS Social Studies
Participant D	Female	HS Math

Cooperating Teacher Participants

The cooperating teacher participants were asked to participate in a post-study interview with the researcher to triangulate data and gain their perceptions of the value of reflection and the reflection habits of the student teacher

participant who was placed with each of them. There were three male cooperating teacher participants and one female. The cooperating teachers had a variety of experience with regard to hosting student teachers, with this being the first student teaching experience for two of the cooperating teachers and two that had many student teachers. Cooperating teacher A and B had many student teachers, and Cooperating teachers C and D had their first student teacher during the study. Each of the cooperating teacher participants had over five years of experience teaching in a public school setting.

Pre-Study Interviews

Brief interviews were conducted with each of the student teaching participants before the study began to determine their perceptions regarding reflection before the student teaching placement started. During these interviews, the researcher asked questions regarding the process each goes through to reflect on a lesson, the topics each typically chose to reflect on, and what undergraduate experiences they have had with reflection in order to determine their pre-study thoughts, feelings, and abilities regarding reflection.

In the pre-study interview, Participant A reported that he knew immediately if a lesson went well or not. He thought about what students were getting from the lesson, what specific skills were gained, and how well they were engaged with the material. He went on to discuss how he thinks about how he might help students to become more motivated to learn the material, either by providing information to the students on what the assessment will be ahead of time, or telling them how this topic of study will be relevant beyond the English

classroom. Participant A shared that he often reflects on things that are weighing heavily on his mind, any troubles that he faced within the classroom, and obstacles he faced. He reported that he makes note, in his reflections, of when a group of students surprises him. For example, he stated, “Some students that have been categorized as low-performing, when they exhibit intelligence that is way beyond what I previously thought, I begin to question these categories that students are placed in.” He also named thinking of additional ways to challenge the class as another typical reflection topic. He stated that his undergraduate education contained some reflection activities, but he was never given any feedback or was never taught how to reflect. He explained that he thought it was just given as an activity, because that’s what you were supposed to do.

Participant B, explained the process she normally goes through to reflect on a lesson, by reporting thinking about if the students were engaged and if she felt as though she had made the lesson interesting for them. She also considered pacing of the lesson, behavior of students, difficulty level of content material for students, and how challenging the lesson was for her to teach. She named student engagement and behavior as the first items that she typically reflects on, and how she might incorporate music or technology into the lesson to make it more relevant for the students in the class. When she was asked if she had been taught to critically reflect in her teacher education program, she responded, “My English methods teacher pretty much taught me the steps I take in my previous answer. She could look at my lesson plans and tell me how I would do, based on each of the criteria.”

Participant C responded to the pre-study interview questions by explaining her process of asking herself if she was able to connect with the students during the lesson, thinking about what she could do differently in the next lesson, and trying to think about some positives and what she has learned throughout the day of teaching. She named thinking about what could have gone differently, and asking what her cooperating teacher thought as topics that she typically chose to reflect on in her post-lesson reflections. When asked about her experiences in her undergraduate education program with critical reflection, she replied, "I've never been taught how to reflect, but we have been given prompts on what the professor wants us to reflect on. In one educational course, we would have a reading and be asked to reflect on the reading and how we might use that in the teaching profession."

Participant D explained the process that she took to reflect in the pre-study interview as thinking about what did go well and what did not. She also asked herself what caused confusion in student understanding. She then takes the next step, which she explained as naming ways in which she could correct the negatives that she identified from the lesson. When asked what topics she typically chooses to reflect on, she named the students' comprehension levels and reflecting on her own teaching if there is confusion among the students. For example, she stated, "If they didn't understand the lesson, chances are it has something to do with the way I taught it…" She reported that she was not sure if she had ever been taught to critically reflect in her undergraduate education

program, but if they did it was strictly on social factors, not on the act of teaching mathematics.

The participants demonstrated that they had very different understandings of the process of reflection and what topics they tended to reflect on. All of them reported that they had no type of formal instruction on critical reflection in their undergraduate education program and very limited feedback on the reflection assignments they were given. The participants provided various amounts of depth in their answers, but all four reported that they typically began reflection with determining the students' reaction to the lesson— their understanding, engagement, and emotional reactions.

Content of Student Teacher Reflections

Analyses of participants' written reflection journals for ten consecutive weeks were used to determine themes to answer the research question: What is the focus of participants' reflections in their written reflection journal during their student teaching placement? Semi-structured interviews with both the student teacher and the cooperating teacher were used to triangulate and provide additional data regarding the content of the reflections.

Emerging Teacher Identity

One focus among all of the participants' written journal reflections was written thoughts surrounding their emerging individual teacher identity. Units of reflection focused on three categories within the broader theme of emerging teacher identity. One category of reflections the data revealed was a challenged or changed belief system regarding one's teaching philosophy. Another category

dealt with newfound feelings of comfort or confidence with teaching skills. The last category within this theme was identifying himself or herself as a teacher or feeling as though they are viewed in the role of teacher.

Challenged or changed belief system regarding teaching philosophy. In the semi-structured post-study interview, Participant A shared that he felt that part of becoming a good teacher is challenging previously held beliefs, so he often made a note in his written reflections of when something that he thought to be true was not effective or when he began to "re-imagine a piece of his philosophy." He elaborated further in his written reflection journal in week two, when he wrote that he does not feel as though he will do as much lecturing as his cooperating teacher does, as he believes this does not leave much class time for students to discuss and interpret the literature within class. He further explained that he would like to provide more time within class to guide discussion and provide critical perspectives, yet allow the students to be actively involved in this process. He stated, "I want to open up more space for student interpretation in class- while still acknowledging my responsibility to guide discussion, and provide context and critical perspectives."

During week five, Participant A reflected about the difference between what he has learned in his methods courses in his undergraduate education program and the teaching styles that he has observed in English classes in the school in which he is student teaching. He commented on the fact that he had not used an instructional style that he felt valuable until this week, as he felt "nervous to deviate" from the observed instructional style. Later, during week

eight, he discussed this idea further, saying that “I struggle with how much of a difference there is between the teaching philosophy I was taught at (institution) and the sort of things I see teachers practicing at (school). It’s very confusing sometimes, because things that I am told are ‘wrong’ are common practice among actual teachers.” In the last reflection journal collected, Participant A discussed two different viewpoints, one of his cooperating teacher and one of the instructional coach, regarding the ‘lowest’ level of students and the amount of instructional time they should receive. He further stated that both viewpoints have validity to them, and he will “strive to strike a balance in my own practice” when he has his own classroom.

Participant B, in her first journal entry, reflected on the idea that she was told the school in which she was placed was a “rough school” in which to teach with a poor reputation. She then stated that she does not believe that is a true representation of the student body, which from her perspective has friendly and pleasant students. She said, “Students here are more worldly and street-smart, but just as friendly and pleasant as their counterparts.” During the week eight journal entry, Participant B wrote about particular school policies, related to discipline, that she did not like because they make it difficult to teach in the school system. She stated that not every teacher within the building enforces the rules in the same manner as her cooperating teacher does, and this causes friction among the staff and students. She further expressed confusion about the type of setting in which she would like to teach based on this friction.

In Participant C's post-study interview, she reflected on interactions she had with a particular student. After attending the parent/teacher conference, she had been able to tell more about the student's home life, and subsequently changed her thoughts on the student's attitude and how she had dealt with that student's behaviors. She commented on the fact that her beliefs had changed about students who had troubling behaviors, and what she thought was the reason might not actually be the true reason for misbehavior. In week seven, Participant C wrote about her need to develop patience, and her realization that her background and upbringing might have played into the amount of patience she shows in the classroom. She said, "I definitely grew up in a household where being patient did not exist, so going forward in my experience that is something I want to work on doing."

In week nine, Participant C confronted one of her beliefs regarding assessing students. She shared her perspective on giving students exams: that they do not necessarily show learning, but then her hesitation to change a routine that her cooperating teacher had set for his students. She ended this reflection by stating that she was thinking about what she could do differently next time in the way of assessing students. In the final reflection, Participant C discussed what she had heard from others before beginning her placement, that students from this particular school could not handle group work, and she should not attempt it. She expressed frustration with this belief, saying "I know these worksheets aren't doing anything for the students," and further explained that she believes that the students need to be, but haven't been, taught to do group work

and provided with high expectations. She went on to say “It is frustrating because I feel as though nobody takes the time to teach the students how to handle it. If this was my classroom, I’m sure for my first year or two, I would struggle on perfecting the group work and more hands on assignments, but in the long run I think the students would benefit from that.”

Each of these participants spoke about something that they’ve heard to be true from others, or a belief that they previously held to be true themselves. They then confronted the belief by either naming an experience that conflicted with it or explaining why they now believed otherwise. Many times, they elaborated by discussing how they would handle this differently if they were in their own classroom or were able to do something differently.

Feelings of comfort and/or confidence in teaching skills. Participants’ journals and interviews revealed a category of reflections that dealt with feelings of comfort and/or confidence in their teaching skills as the student teaching experienced progressed. This category of reflections fell under the broader theme of emerging teacher identity. Participant A noted in week one of his reflection journal, that he was feeling comfortable and confident in front of students, and is excited to begin leading classes and implementing plans that he has designed. During week four, Participant A remarked on how he was feeling increased confidence in being able to manage the time and the pacing of a lesson as his experiences develop, by stating, “I feel that I am developing a much better sense about how much time can and should be devoted to analyzing the elements of text that students have questions about. This is particularly

important when they fixate on something in the text that's not particularly important." Participant A then spoke of developing better skills in order to de-centralize himself as the learner, and instead putting this responsibility on the students.

During week two, Participant B commented in her written reflection journal on her enjoyment and finding her niche in teaching in urban education, whereas she previously felt uncomfortable. During week three, she wrote about feelings of confidence related to teaching from her own lesson plans and the teaching style she chose, writing "I felt confident of what I was teaching and my teaching style went over well." During week five, she described her increased confidence in dealing with student behavior and discipline problems, and was pleased by the outcome of an interaction with one particular student. In week six, she wrote about developing the ability to work with both students who are motivated and students who are unmotivated. In the journal entry for week eight, Participant B discussed a successful lesson in which she felt proud of her skills because the students were reacting to an improvised part of the lesson in a positive way. During the last week of the study, Participant B wrote, "I feel so much more ready to handle my own classroom now," and further explained that she learned a lot about her teaching abilities and making an impact on students.

Participant C spoke of feelings of doubt that she previously held and her increased confidence in her teaching abilities in week four, by stating, "I had doubts in myself, not knowing if I could do it, but after yesterday, I don't have anymore doubts." During week six, she wrote that she was looking forward to

having her own classroom and taking over the plans to further hone her teaching skills.

Participant D wrote about feelings of comfort and confidence in week two, when she described her feelings of comfort increasing as the leader of the classroom and that students are beginning to respect her. During week three, she wrote about increased confidence in her ability to teach the lesson as the amount of times she had taught the lesson increased throughout the day. She went on to speak about feeling "in the routine" helped her develop confidence in what she was saying as the teacher. Later, the next week, Participant D reflected about a concept she had a particularly difficult time with as a student, and how her feelings of uneasiness with this subject went away as she had more positive experiences with teaching it in the classroom, stating "It takes a lot out of me to teach word problems. I'm not comfortable with teaching a subject that I myself am not confident with, but by practicing I have gotten immensely better." During the last week of the study, the student teacher described a time in which she was left alone with the group of students because of a substitute shortage. She went on to say that this experience increased her confidence further because she felt trusted, and that she felt comfortable because she knew all of the students at this point.

All four student teacher participants wrote about increased feelings of comfort and confidence in themselves and their abilities to function as the lead teacher in the classroom. Many of them made comments or wrote about the development of their teaching skills that they had learned in methods courses,

and they reported that they felt increased confidence and comfort as their experience progressed and they had more interactions with students, teachers, and lessons.

Identifying with a teacher role and seeing oneself as a teacher. The final category that emerged within the theme of "emerging teacher identity" was the student teacher identifying himself or herself as an actual teacher. This was expressed in their written journal entries as both self-identification as a teacher and also things that the students said or did that made him or her feel as though he or she were a "real" teacher.

In week seven, participant A wrote about feeling as though he was able to empower students to use their critical voices, and how he felt good and confident in that position, writing, "With the AP students, all these activities seem to be working well because they provide all the students with a chance to think creatively before I start giving them 'answers', or my personal perspective on the text. In this way, I think I've gotten better at de-centralizing myself." Participant B wrote in her journal entry, "One even said I was his favorite teacher! It was cool to be called a teacher by a student." The next week, Participant B stated that she was feeling more like a teacher and felt eager to take the lead of the classroom.

In week eight, Participant B spoke about an incident in which she saw a student outside of school, and the student called her his favorite teacher which "made her day." In week nine, she wrote about the feeling of transitioning from a student role to a teacher role and the difficulties associated with that. During the

final week, she wrote that as she enforced the rules more, the students “see me as a real teacher now, not just a fun helper.”

Participant C, in week two, wrote that “I felt as though the students look at me as a teacher and not just a student teacher, which is refreshing, because that is always a worry you have going into placement.” Later, in week four, she wrote about being able to handle discipline on her own and not having to ask for another teacher’s help, which made her feel as though she was a real teacher. In week three, Participant D spoke about developing a particular teaching style that includes humor that students seem to be responding well to and she feels comfortable.

Within the theme of emerging teacher identity, student teachers who participated in the study reflected on times when they felt as though their teaching philosophy was challenged or changed, when they began to feel more comfortable and confident with teaching skills, and when they saw themselves as a teacher. While not every participant included reflections in each category, each of the student teachers did reflect in some way on their emerging teacher identity and the development of a teaching philosophy.

Feedback from an Experienced Professional

Another theme that emerged from student teachers’ written reflection journals was the feedback they had received from some type of experienced professional. All of the participants commented, questioned, or explained the feedback they were given on a lesson or teaching experience and went on to state how that feedback impacted their thoughts or actions. Two categories

emerged within this theme: student teachers seeking planning advice from an experienced professional, and student teachers receiving feedback on a lesson that was taught or on their teaching style.

Planning advice from a professional. During week two, Participant A wrote about the opportunity to bounce ideas off of his cooperating teacher, and continued writing about his feelings of encouragement when he got a positive reaction to the lessons he planned. He also wrote that he felt good about the fact that his cooperating teacher was open to him trying new things, as long as the goal of the lesson was the main focus. He wrote, "I was encouraged that he reacted very positively to all of my ideas. I appreciated his perspective that it's okay to try out some different methods of teaching as long as they are all rigorous and relevant to the classes' objectives." Later in the same journal entry, Participant A wrote about advice that he received from the cooperating teacher about making judgments about what aspects of text are most important to cover with students based on the text and skills with which students are coming to class. In week nine, Participant A wrote about how he sought out the advice of the district's instructional coach for advice regarding the instruction of a challenging group of students. He went on to explain the various ideas of instructional strategies that she provided to him and his appreciation for and newfound confidence in using these skills.

Participant B, in week two, reflected on how her cooperating teacher modeled a discipline situation with a student in a calm and fair way, stating "My co-teacher dealt with them calmly and fairly. She stated the rules and their

consequences for breaking in them. It was good for the other students to see that she enforces her rules." She related that incident to her own practice and how she would like her behavior management style to be by mirroring that of her cooperating teacher. In week one, Participant C wrote about her feelings about receiving advice from her cooperating teacher regarding a unit she was planning to teach. She expressed her appreciation for him giving her feedback on her plans, and how she felt thankful that he was willing to allow her to try new things in the classroom. She wrote, "Mr. C. has been extremely helpful with allowing me to bounce ideas off of him to see what will work and what will not work. He's also very willing to have me try new ideas, which is comforting as well." Later, during week seven, she stated that all of the teachers were a great resource to her to "bounce ideas off of them" in her planning for future lessons. Three of the four participants chose to write about using the professionals in their network (cooperating teachers, supervisors, and instructional coach) as a resource for planning and behavior advice.

Feedback received on a lesson or teaching skill. Another category of reflections within the theme of "feedback from an experienced professional" dealt with receiving feedback, either positive or negative, on a lesson, discipline situation, or teaching style. In week three, Participant A wrote about the area in which his cooperating teacher thought that he could improve, providing more positive feedback to students. Participant A then went on to write about how he noticed the same thing within his instruction, and the steps he took to improve in that area. During week 4, Participant A wrote about a supervisor observation

and the feedback he received, calling it a “reality-check.” He reflected on the feedback which he was given, varying instructional methods, and wrote out the steps he went about to correct or improve in this area throughout the week, writing “For the rest of the week I worked very hard to ensure the ‘so what’ of the lesson was clear to both my students and myself. I also incorporated group work in my lessons.”

Participant B, in week two, wrote about constructive criticism she received from her cooperating teacher regarding the pacing and scripting of lessons. During week three, she wrote about feedback she received from her cooperating teacher regarding her discipline and classroom management, mostly the tone in which she speaks to students, by writing, “My co-teacher had some helpful feedback for me. I need to speak in a stronger voice (I am using too nice of a voice) and leave more time for students to answer when I ask questions.” In the following week, she wrote about this again, and additional feedback from her cooperating teacher, in which she told her to be “stricter and more alpha.” In week eight, Participant B reflected on feedback she received from her supervisor, who provided an idea for an instructional strategy, guided notes. She went on to describe how she tried this in the class. She also mentioned feedback she was given from her cooperating teacher, which she described as “great insight”, regarding reading aloud to students.

Participant C wrote about constructive criticism she received from her cooperating teacher in week one regarding handling discipline. She went on to write “I found it extremely helpful to have him tell me that because other wise I

would not have known a better way to handle the situation." During week three, Participant C wrote about feedback she received from her cooperating teacher on her first co-taught lesson, which was described by the student teacher and cooperating teacher as "awkward." She also wrote about positive feedback her cooperating teacher gave her regarding the lesson: that she did well moving about the room and asking questions on the fly. In week four, she reflected on two compliments she received from teachers who sat in the room when she was in charge of the classroom and stated that she felt "relieved" to get these compliments. During week five, she briefly mentioned positive feedback she received from the supervisor and cooperating teacher.

In week five, Participant D wrote about being pleased with herself because she was being observed by the assistant superintendent and got positive feedback because the students were quiet and on-task. A few weeks later, she wrote about being observed by the principal and said, "he was very pleased with how the lesson went."

While this was not named in any of the student teacher or cooperating teacher interviews as something the student teachers reflected about, each of the student teachers reflected on feedback they had received from supervisors, cooperating teachers, and other education professionals in their written reflection journals. Some of the student teachers described constructive criticism, while others chose to write strictly about the positive feedback and feelings associated with that feedback.

Student Response to Instruction

An additional theme that emerged as a focus of student teachers' written reflections was how students responded to a lesson they taught and/or their teaching style. Within this theme, student teachers described emotional responses that students had to lessons, whether they enjoyed the lesson or not, or their mood related to a particular situation. Additionally, they described student engagement or motivation as it related to a lesson or group of students. They also reflected on student behaviors and student understanding of lesson content/concepts. The reflections that fall within this theme are broken down into each of these categories, which are described next.

Students' emotional response to a lesson. Some student teachers wrote in their journals about whether students enjoyed or did not enjoy a lesson or instructional strategy. They also wrote about students' emotional states or moods in response to a lesson, teaching style, or classroom instruction. In week six, Participant B wrote about students being upset with an instructional method that she chose by stating, "There is going to be quite a lot of grumbling about reading it by themselves." In week eight, the same participant discussed how she felt that students were responding well to her teaching style, "getting a kick" out of certain things she said and did. In week seven, Participant C, while discussing a lesson, said that she was aware that students did not enjoy the lesson, because she did not.

Participant D often reflected on students' emotional response or mood to a lesson that she taught. In the cooperating teacher interview, he named this as

something Participant D chose to reflect on: “where they were in terms of their comfort level in terms of were they happy about it, were they frustrated, did they seem confident, you know, what they were giving in a non-mathematical sense.” In the post-study interview, Participant D named this as a topic she typically chose to reflect on as well. She stated “I tried to think of how the students attitudes were; I know that sounds kind of weird, but if they leave here happy and smiling and laughing.” In the written reflection journal, in week one, Participant D wrote about lessons that the students “enjoyed.” In week three, she reflected on students’ negative reactions and self-confidence when it came to a particular skill she was teaching. In week seven, she wrote about students coming into class feeling confident in a particular skill, which pleased her, by writing “They came into class feeling really confident and kept negotiating starting homework and skipping notes. It is really good to know they came into class with confidence with math.” While not all participants wrote or wrote often about students’ emotional responses to their instruction, some of the participants reflected on it using very specific language that warranted its own category.

Student motivation and/or engagement. During the ten-week study period, all of the participants reflected on students’ response to instruction in the way of their motivation or engagement with a particular lesson, content, or strategy. During week four, Participant A wrote about how he noticed that students were not paying attention to his instruction so he changed his instructional style based on this student response. He stated, “I employed an instructional style that emphasized read-aloud, think-aloud, journal quick-writes,

lecture, and full class discussion. Although I learned many other instructional techniques in my methods courses last year, I failed to use them these first few days of classes because I was nervous to deviate from the instructional style I have observed in most of the English classes in this school so far." During the next week, Participant A wrote about how an instructional strategy "engaged the students to think for themselves" and also listed other positive outcomes. In week seven, Participant A wrote about how students seem to be motivated by "the idea that there are multiple valid approaches to analyzing literature and decoding meaning" based on the type of instruction that he chose for the lesson. Participant A went on to discuss a lower-level class, which he described as unmotivated and reflected on ways that he was trying to engage them within the lessons. He wrote, "They are also extremely unmotivated, which presents its own set of problems. Fortunately, the class is small enough that I have been able to have some success in teaching them with open-ended writing assignments, which I can use as a vehicle for instruction in grammar." In the last week of the study, Participant A discussed the use of an introductory activity with a group of students, and how that seemed to engage them much more than lecturing.

In an interview with Participant B, she named "how to get students to do something" as a topic on which she reflects. For example, she explained that she writes about what will motivate students to 'get through' certain content or activities. She then named a specific lesson in which she felt the students were extremely engaged and described the reactions of the students in order to demonstrate their engagement. She wrote, "They totally surprised me, this

intervention class, and we had a couple of minutes left and the one girl was like oh! How about the lion king? And everyone just started shouting who was the villain and who was the hero, and I was like oh my gosh! It was the most amazing moment." She went on to explain that she felt as though she found the key in that moment to make learning fun. In week six, Participant B discussed showing movies and other motivating teaching activities and described how she felt that "goes a long way towards building positive relationships with students."

In week nine, Participate C wrote about how she felt as though she could have designed the unit in a way that engaged students more. She went on to reference a thematic approach, as was discussed in a methods course, as a way she thought might better engage her students, stating, "Not that I thought my lesson plans were awful, I feel as though I could make it more engaging for students, if I tried a theme approach, like we discussed in our Methods class.." In the third week, Participant D reflected on the students taking initiative by seeking her out to ask questions about their learning. Later, she wrote about a student that she felt was unmotivated and how the student reacted in a negative way to her, then brainstormed possible reasons for this. All of the student teachers at some point reflected about how students were either engaged or motivated with their lessons, or the opposite, disengaged and unmotivated. Sometimes this followed with a reason or possible reasons why, and other times it was simply written as a fixed statement in their reflection journals.

Student behavior. Student behavior emerged as a category of written reflections under the broader theme of student response to instruction.

Participants reflected on students' behavior in response to their teaching style or a lesson, often reporting only negative or disruptive student behavior. For example, Participant A reflected on the behavior management strategy of planned ignoring when a student became disruptive in one of his classes. He wrote that he thought the strategy worked well for this particular student to minimize the disruption.

Participant B and her cooperating teacher both reported, in the post-study interviews, that student behavior was a main reflection topic in her journals. The cooperating teacher said that this was often a big topic of reflection because it played such a large role in the classroom and school district in which the student teacher was placed. Participant B explained that the entire district has been declared 'free lunch' because the poverty rate is over eighty percent. She explained that there were large behavior issues with the students, such as refusal to complete work, swearing at teachers, blatant disrespect, and once in a while physical altercations. In week three, Participant B reflected about some of the behavioral disruptions that the students take part in: acting out, foul language, and walking out of class. She went on to state that "underneath all their bravado and bluster, these are just kids and they crave attention like any other kids. They just have had more success in getting negative attention." In week nine, Participant D wrote about a student's disruptive behavior and how she will address the situation in the future if this student's behavior continues. She wrote, "I had one student the entire class being on her phone not caring. She was mad at me for making her take her quiz yesterday since she was not in

class Monday… if her behavior continues tomorrow, we will have a few words to say." Students' behavioral responses that were mentioned were mostly a situation or incident in which the student teacher felt challenged, and they often described the situation and how they chose to handle it.

Student understanding. The final category within the theme of student response to instruction is student understanding. Within this category, student teachers reflected on the depth and/or level of understanding that students had on the topic or lesson. In week two, Participant A reflected in his journal about using an "analytical" question with students who were considered low-level, and he was pleased with the level of understanding they demonstrated, stating "we decided to give it a shot, and it ended up leading to a much deeper level discussion, and stronger writing from the students." In week eight, Participant B wrote about a particular student's ability to understand comprehension questions when she tried the strategy of using guided notes, citing the fact that the student named it easier to understand her instruction using this method. Participant C, in week seven, reflected on how students struggled with a particular concept, and how she plans to reteach for better understanding the following week. She wrote, "I noticed that students struggled with the one, so I plan on going over this with them and allowing them to copy answers down as we are discussing questions." During week eight, she discussed students' performance on one of the worksheets and how she felt the students did poorly and described her plan for re-teaching the concept for better understanding.

In Participant D's post-study interview, she cited the difficulty of the content and the level of their understanding of that content as something on which she typically reflects. She went on to say that she gauged this understanding by judging the students' emotional responses to the content and whether they self-identified as 'getting it'. Similarly, in the cooperating teacher interview, Participant D's mentor stated that she would use assessments (both formative and summative) to determine whether students understood the content "at least at an initial level." In her journal, in week two, Participant D wrote about how some students who are weak in a particular area struggled even more with a concept she was teaching. A number of weeks later, she wrote about how students "love their material, because it makes sense to them", further stating that they liked the lesson because the concept came easy to them. Although not reflected on extensively, there were times throughout each participant's journal in which they referenced students' levels of understanding of a particular concept. Sometimes this learning was tied to an instructional strategy and the evaluation of it (see following section) and sometimes they just made an unconnected comment about the students' levels of understanding on a certain skill.

Need for Adaptation/Flexibility

A fourth theme that emerged in the topics of student teachers' written reflections was the need for making adaptations to lessons or teaching based on two different categories. Sometimes the student teachers identified the need to be flexible based on something unexpected that happened throughout the course of

the unit, day, or lesson. Other times, the student teachers reflected on the need to adapt based on student need: either behavior, engagement, or understanding.

Flexibility. In some cases, the student teacher participants reflected on the need to be flexible in their instruction and teaching methods based on an unexpected event that happened or something that they were unprepared for. For example, in week two, Participant A wrote about his difficulty in reading a story and completing the activities because he did not do enough planning. Because of this lack of planning, he had to adapt the activity he had originally planned as he was teaching, and felt very ill prepared. He wrote, "Although the class went well-I read the story for the first time while students listened and discussed- I never want to read a story for the first time in front of students again. It was very difficult for me to read the story aloud, comprehend it myself, monitor the class, ask questions, and respond to student questions all at the same time." In a different week, he reflected on the need to have back-up lesson activities because of the performance of a piece of technology he had tried to integrate in his lesson. He wrote about the need to not rely on one method, but rather have some alternate ideas in mind.

Participant B, in her post-study interview, discussed the need to come up with "back-up plans." In this example, she cited students not completing homework and having a plan for how they might use class time to get the assignments done. In her written reflection journal, she wrote about a time when she had to adapt the method of delivery of a lesson she had originally planned as

a parallel co-teaching lesson with her cooperating teacher, and had to revise it during instruction to teach it by herself due to an unexpected absence.

In week three, Participant C discussed how she and her co-teacher had "veered off the plans for the co-teaching delivery," but it worked out well. Later, in week seven, she reflected on being sick for a day of teaching, and commented on how it negatively impacted the following day's lessons, making her feel ill prepared to teach for the rest of the week. In Participant D's written reflection journal, she wrote about the need to switch lesson topics to different days because of a school scheduling conflict and then went on to describe how she was glad she was able to switch the lessons because she believed it led to a better outcome for student understanding. She wrote, "I decided to switch my two lessons. I decided this, this morning. It worked well and my students, that will be missing, are glad I switched the lessons."

Adapting for the needs of learners. Another way that student teachers wrote about the necessity to adapt lessons or teaching methods had to do with the needs of the learners with which they were working. They wrote about adapting a lesson or instructional method based on students' levels of engagement, behavior, or understanding of a concept. In the post-study interviews, both Participant A and his cooperating teacher said that one of the topics he reflected on the most was the need to adapt instruction based on learner needs. In week five, he wrote about changing his instruction to include more writing skill instruction before the next assignment based on student performance on an essay assignment, stating, "While reviewing student

responses, I began to see clear patterns of learning needs in many responses. In response to these recurring issues, I left individualized feedback on every student's essay, and developed a writing style guidelines sheet that specifically targets the most frequent errors I saw which I will hand out and review with students." The next week, Participant A reflected on teaching strategies that he would use to increase writing skills in students in order to increase their performance, and wrote about how he was glad to have done this because it led the students to do well on the next assessment. Later, during week nine, he wrote about the need to plan questions and meaningful discussions in the lower-level classes in order to be better prepared to prompt the students to have meaningful analysis about a text. During the last week of the study, Participant A wrote about being "glad he took the time to modify my lesson plans and structure to try out a range of these book-end activities, and I've started to see that such a simple modification can really pay a lot of dividends."

In week five, Participant B reflected on adapting instruction based on the needs of the learners by stating that she felt the need to pick up the pace of her lessons, and adjusting the methods ("straight-forward works better") of instructing the students based on their response. The next week, she discussed how she chose to remove part of the text for reading to narrow the focus based on students' attention to the material. She wrote, "By narrowing the focus to only what they would need to fill in their guided notes, I was able to hold their attention better than on previous reading days." In week seven, Participant B reflected on

adapting lessons based on student behavior that was being displayed, and mentioned other activities with which she was replacing the original plan.

In the post-study interview, both Participant C and her cooperating teacher said that she reflected on how to cover the same material for all class periods of students, but vary the method in which it was taught based on the academic levels of students in that class period. In week three, she wrote about how students were not "handling group work well" so she changed the assignments so they could be completed as individual assignments. In week eight, she wrote about possible causes for students not performing well on a worksheet, and talked about how she could and would explain the directions in a more clear way next time. In her journal, she wrote, "I looked at ways that I could have introduced the worksheet that the students didn't do well on and the only thing I could think I could do better is explain it a little more." She went on to explain that revisiting the topic is the only way that both she and the students will learn from the experience.

In Participant D's post-study interview, she named "determining if the students understand the material and then brainstorming ways that she can re-teach to help them understand the material" as a main topic that she reflects on in her journal. She went on to talk about students' performance on assessments, and how she used that information to change her teaching. In the third week of her reflection journal, Participant D wrote that some students needed her help more in solving a particular problem than others. She identified that there is a difference in ability level of her students, and wrote about her need to respond in

different ways based on this. During the last week of the study, Participant D reflected on the difficulty level of an assessment, and assumed fault for possible reasons why the students did not perform well, writing, “Algebra 2 did pretty bad on their quiz. I think this is actually my fault. Looking back on the quiz I made, it was pretty tough for their level of knowledge.” She explained how she would re-write the assessment in a different way the next time.

The theme of finding the need to adapt instruction based on students’ responses and being flexible as a teacher appeared numerous times across all four participants’ journal entries.

Description of Instructional Methods and Evaluation

Another theme that emerged within participants’ written reflections as a topic was the naming and evaluation of instructional methods that were used in teaching and/or lessons. Participants usually first described the instructional method or strategy and then explained how they knew if it worked or did not work for a particular group of students. The theme was broken down into two different categories: description and evaluation of instructional methods related to assessing students, and related to teaching strategies.

Assessing students. While instruction and assessment are often tied together in reflections, sometimes the student teachers wrote their thoughts only about how students performed on a particular assessment, or how they could have changed the way in which they gave or graded that assessment. In week four, Participant A wrote about the success of a class discussion on a literary topic, and came up with possible ideas on why the students might have had this

success. He thought it was related to how he changed instruction in the week or so previous. In his journal, he wrote that he used a jigsaw method, broke students into groups to analyze the text, and assigned groups a chunk of text and turned the activity into a whole class debate. He said, “Every single one of these lessons engaged the students to think for themselves, to review the text multiple times to justify their ideas, and engage in authentic debates about the value system portrayed in the text.” The next week, he reflected on reviewing student responses on an assessment and noticing patterns of needs that the students were showing in their writing. He then reflected on possible ideas to remedy this skill deficit and build these skills in the coming weeks. Later, Participant A wrote in his journal about how he was going to allow students to go back and revise their work they had already turned in in order to help them master skills that they were not showing mastery of on the assessment. Participant C, in week five, wrote about reviewing an assessment and shared her idea of how she would grade the assessment in the beginning, but then how her thoughts had changed when she realized that students were making mistakes about the directions, rather than the content itself, stating, “I had every intention of marking points off for wrong answers, and then I went through a couple and realized that a lot of students were getting answers wrong, simply because they were not following instructions.”

Instructional methods. More often, within the theme of description and evaluation of instructional strategies, participants reflected on the actual teaching method that they tried, most often the ones that elicited some sort of positive

response from the students, based on student engagement or understanding. Participants sometimes compared two strategies that they had used and discussed which one worked better, or simply described a strategy they thought worked well and explained how they knew that it worked for their students. For example, Participant A, in week six, reflected in his journal about what he did to help students improve in their writing skills: holding individual student conferences and structuring the unit to build in time for revision and other opportunities for writing growth. The next week, he wrote about his attempt at re-structuring the class to include a wide variety of instructional activities, whereas before he identified himself as narrowly focused, by stating, "With the AP students, all these activities seem to be working well because they provide all the students with a chance to think creatively." He went on to comment that he thinks this change is impacting the students in a positive way. During week eight, he wrote about the realization that he came to with using the strategy of having students write their answer before discussing in a whole group. He shared, in his evaluation of this strategy that it allowed for more students to participate in a meaningful way in the discussion that followed.

Participant B often reflected on instructional strategies that had to do with classroom behavior management. In week one, she reflected on the importance of creating a scheduled procedure for behavior distractions and how this helped her to maintain a positive climate in the classroom. In the fourth week, she wrote about the opportunity to have a one-on-one behavior conference with a student and the way that this strategy led to improved behavior for this student. She

wrote, “A student refused to listen to me and was extremely disruptive and disrespectful to me. I held a brief conference with the student and let her know that her behavior was inappropriate and if it continued, she would be written up and the consequences would keep moving up.”

In week eight, Participant C wrote about how she needed to go back and examine the way in which she gave instructions for a particular assignment and how she might rephrase them in a different way the next time. The next week, she wrote about her need to come up with various instructional activities as opposed to doing worksheets with the students all of the time. She reflected instead on an idea to have the students learn about a civilization and then teach the class what they’ve learned through a project. In week nine’s journal entry, she said, “I am currently planning on giving students a topic, and having them teach the class. I have not worked out all the details yet but I am going to break it into religion, economics, culture, inventions, politics, environment, and social class.”

Participant D gave descriptions and evaluations of instructional strategies in week one, she wrote about how she chose to set up the class in stations for the lesson, reflecting that this set-up went well. The following week, she reflected in her journal about making the lesson more visual because she knew a group of students would struggle with the concept if she did not.

Summary of Research Question 1

Five themes emerged in student teachers’ written reflection journals when they were examined for the research question: what topics did student teachers

choose to reflect on in their written reflection journals? The five themes: emerging teacher identity, cooperating teacher/supervisor feedback, student response to instruction, need for adaptation/flexibility, and description and evaluation of instructional strategies, appeared in all four participants journals multiple times. Almost all of the written reflection data units were able to fall within one of the five major themes that emerged. Many of the themes were validated when the student teachers and their cooperating teachers were asked what they typically chose to reflect on after a lesson in the post-study interview. Tables for themes and categories of reflection topics for each participant by week are listed below.

Table 3

Participant A Written Journal Topics and Researcher Prompts

Week Number:	Written Reflection Journal Themes & Categories
1	• Cooperating teacher/supervisor feedback – planning/advice • Emerging teacher identity – confirmed/challenged beliefs *No prompts provided from researcher in the first two weeks.*
2	• Need for adaptation/flexibility- flexibility of lessons • Student response to instruction- student understanding • Emerging teacher identity- confirmed/challenged beliefs *No prompts provided from researcher in the first two weeks.*
3	• Student response to instruction- engagement/motivation • Emerging teacher identity – confirmed/challenged beliefs • Need for adaptation/flexibility – based on learner needs • Cooperating teacher/supervisor feedback- feedback on lesson *Researcher prompts: "What do you believe to be true about students and student learning that allowed these strategies to be effective?"*

4	• Emerging teacher identity- confirmed/challenged beliefs • Cooperating teacher/supervisor feedback- feedback on lesson • Student response to instruction- engagement/motivation • Description and evaluation of instructional methods – assessment • Cooperating teacher/supervisor feedback- feedback on lesson *Researcher prompts: "How are you beginning to think differently about how students learn based on these experiences?"*
5	• Description and evaluation of instructional methods- assessment • Need for adaptation/flexibility- based on learner needs *Researcher prompts: "What beliefs do you have about student learning that might explain this? Are any of these beliefs being challenged from experiences within the classroom?"*
6	• Need for adaptation/flexibility- based on learner needs • Description and evaluation of instructional methods- instruction • Description and evaluation of instructional methods- assessment • Student response to instruction- engagement/motivation • Emerging teacher identity- confirmed/challenged beliefs • Need for adaptation/flexibility- flexibility *Researcher prompts: "Do you view this learning experience as a success? Would you have acted differently after having the information that you have now, or gone through the same course of events?"* *"Does this change or confirm any beliefs that you previously held about students/motivation/learning?"* *"It seems like you are conflicted between the importance of technology use and the logistical issues. How might you proceed or change either what you are doing or what you believe for future lessons?"*

7	• Description & evaluation of instructional methods-instruction • Emerging teacher identity- confirmed/challenged beliefs • Student response to instruction- engagement/motivation • Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "What do you believe about how students learn best that might explain why this is "better"? Does this belief work with different student populations? A different subject?"* *"What types of experiences have you had that help you 'confront' some of the conflict between those two belief systems? How can you use the experiences to change or confirm the belief system you previously had?"*
8	• Description and evaluation of instructional methods-instruction *Researcher prompts: "Do you feel like this was helpful or beneficial for student learning? What do you think makes this so?"* *"Why do you think this is? Do you think this method benefits all students?"*
9	• Need for adaptation/flexibility- based on learner needs • Cooperating teacher/supervisor feedback-planning/advice • Description & evaluation of instructional methods-instruction • Cooperating teacher/supervisor feedback-planning/advice • Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "Do you think this method might work with different students? Is there a way you can transfer this same idea to a different concept that you teach?"* *"So what belief did you confront here? Do you now believe that you need to make yourself more of an expert for students reading a lower level of text?"* *"Do you believe that when students are talking and writing, they are more engaged with the text/thinking?"* *"I like that what she said challenged your belief system a little bit regarding this. It seems like this might be different depending on the students and his/her own unique needs."*

10	• Description and evaluation of instructional methods-instruction • Student response to instruction- engagement/motivation • Need for adaptation/flexibility- based on learner needs *Researcher prompts: "It seems like your experience has helped you focus and refine your philosophy of teaching and student learning. Do you think these methods would work for all students, all ages, all subjects?"* *"You are solidifying your beliefs about how students learn best. How will this shape your future actions?"*

Table 4

Participant B Written Journal Topics and Researcher Prompts

Week Number:	Written Reflection Journal Themes & Categories
1	• Emerging teacher identity- confirmed/challenged beliefs • Description and evaluation of instructional methods-instruction *No prompts were provided from the researcher in first two weeks.*
2	• Cooperating teacher/supervisor feedback-planning/advice • Cooperating teacher/supervisor feedback- feedback on lesson • Emerging teacher identity- confirmed/challenged beliefs *No prompts were provided from the researcher in first two weeks.*
3	• Emerging teacher identity- confirmed/challenged beliefs • Cooperating teacher/supervisor feedback- feedback on lesson • Student response to instruction- behavior *Researcher prompts: "Do you believe that this feedback from your cooperating teacher will lead you to be more effective? Why do you think it will or won't work?"*

4	• Cooperating teacher/supervisor feedback- feedback on lesson • Description & evaluation of instructional methods-instruction *Researcher prompts: Do you feel as though this behavior conference was effective? What do you know to be true about student behavior that would make this true?"*
5	• Emerging teacher identity- confirmed/challenged beliefs • Emerging teacher identity- teacher role • Need for adaptation/flexibility- based on learner needs *Researcher prompt: "Why do you think that straight-forward lessons seem to be going over better? What experiences helped you to think this is true?"*
6	• Student response to instruction- engagement/motivation • Need for adaptation/flexibility- flexibility • Description and evaluation of instructional methods-instruction • Need for adaptation/flexibility- based on learner need • Student response to instruction- emotional • Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "What does this make you think about student learning and motivation?"* *"Why did you make this instructional choice? Did this experience change what you know to be true about how this group of students learn?"*
7	• Need for adaptation/flexibility- based on learner need • Emerging teacher identity- teacher role *Researcher prompts: "Why do you believe this might be true?"* *"What do you plan to do differently that you think might make them act in a different way? Is there anything about your beliefs or actions that have changed?"*

8	• Emerging teacher identity- teacher role • Emerging teacher identity- confirmed/challenged beliefs • Cooperating teacher/supervisor feedback- feedback on lesson • Student response to instruction- student understanding • Need for adaptation/flexibility- flexibility • Student response to instruction- emotional *Researcher prompts: "What do you believe about students that caused this partner work to be such a success? What can you use in future situations that might mimic this type of success?" "What about this caused it to be such a success? Rapport they've built with you? Novelty of the idea? Could you use that belief in future lessons in some way?" "Why do you think that is? Why is it that this particular thing motivates them to want to do better? Can you generalize this belief to other areas of your teaching?"*
9	• Cooperating teacher/supervisor feedback- feedback on lesson *Researcher prompts: "What do you believe about student behavior that might explain this?" "What did she do differently? Did you feel like this method was effective? What does that tell you about student behavior?" "What do you think is true about students and their level of behavior/respect in each of these two incidents that made them successful?"*
10	• Emerging teacher identity- confirmed/challenged beliefs • Emerging teacher identity- teacher role • Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "What did this tell you about the gallery walk activity or the effect that it had on your students?"*

Table 5

Participant C Written Journal Topics and Researcher Prompts

Week Number:	Written Reflection Journal Themes & Categories
1	• Cooperating teacher/supervisor feedback- feedback on lesson • Cooperating teacher/supervisor feedback- planning/advice *No researcher prompts were provided the first two weeks.*

2	• Emerging teacher identity- teacher role • Need for adaptation/flexibility- based on learner need *No researcher prompts were provided the first two weeks.*
3	• Need for adaptation/flexibility- flexibility • Cooperating teacher/supervisor feedback- feedback on lesson *Researcher prompts: "What do you believe to be true about student learning that will make this a more authentic way to teach the material?"*
4	• Emerging teacher identity- confirmed/challenged beliefs • Cooperating teacher/supervisor feedback- feedback on lesson • Emerging teacher identity- teacher role *Researcher prompts: "What did you see and notice students doing that you would view as 'successful'?*
5	• Description & evaluation of instructional methods- assessment • Cooperating / supervisor feedback- feedback on lesson *Researcher prompts: "What do you believe to be true about student learning that helped you to decide to score the assignment in this way?"*
6	• Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "What do you believe to be true about co-teaching versus having your own classroom that might lead you to think this way?"*
7	• Need for adaptation/flexibility- flexibility • Student response to instruction- emotional • Student response to instruction- student understanding • Emerging teacher identity- confirmed/challenged beliefs • Cooperating teacher/supervisor feedback- planning/advice *Researcher prompts: "What could explain why students didn't enjoy it? What is true about students/motivation/learning in general that could apply to a new situation?"* *"Why do you believe this is so important for students and learning?"*

8	• Student response to instruction- student understanding • Need for adaptation- based on learner need • Description and evaluation of instructional methods-instruction *Researcher prompts: "Do you think this solution will work on a different group of students? For a different subject? Is there something you would always do differently when explaining the directions, or is it just an isolated incident for this topic in this classroom?"*
9	• Emerging teacher identity- confirmed/challenged beliefs • Description and evaluation of instructional methods-instruction • Student response to instruction- engagement/motivation *Researcher prompts: "Do you think you will use the traditional form of assessment, then? Or try something different?" "What might explain this?"*
10	• Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "It seems that you are confronting the belief system that you got from others that these students "can't handle group projects" and beginning to question that. What would you try if it was your classroom and there were no restrictions? How might you structure it?"*

Table 6

Participant D Written Journal Topics and Researcher Prompts

Week Number:	Written Reflection Journal Themes & Categories
1	• Description and evaluation of instructional methods-instruction • Student response to instruction- emotional • Student response to instruction- student understanding • Emerging teacher identity- confirmed/challenged beliefs • Student response to instruction- engagement/motivation *No researcher prompts were provided the first two weeks.*
2	• Emerging teacher identity- confirmed/challenged beliefs • Student response to instruction- emotional *No researcher prompts were provided the first two weeks.*

3	• Need for adaptation/flexibility- based on learner need *Researcher prompts: "What do you think might cause this anxiety?"*
4	• Emerging teacher identity- confirmed/challenged beliefs • Description & evaluation of instructional methods- instruction • Need for adaptation/flexibility- flexibility *Researcher prompts: "What is it that makes them 'tune-in' to something like this? What do you believe about student motivation that might cause this to happen?"*
5	Not submitted
6	• Emerging teacher identity- teacher role • Emerging teacher identity- confirmed/challenged beliefs • Student response to instruction- student understanding *Researcher prompts: "What did the events of today teach you about your belief system about student learning and motivation?"* *"What do you think might be the cause of this?"*
7	• Description and evaluation of instructional methods- assessment • Student response to instruction- emotional • Cooperating teacher/supervisor feedback- feedback on lesson *Researcher prompts: "Why do you think these aspects needed to be clarified?" "What did you observe that showed you the lesson went well?"*
8	• Description & evaluation of instructional methods- instruction • Emerging teacher identity- confirmed/challenged beliefs *Researcher prompts: "What about the way that students learn do you think caused that to be true?"* *"What did this tell you about your comfort level teaching? About your abilities as a teacher? Did it change your views on anything?"*
9	• Student response to instruction- engagement/motivation & behavior • Cooperating teacher/supervisor feedback- feedback on lesson *Researcher prompts: "What do you do and/or the students*

	approach differently from when you started that might cause this change?"
10	• Student response to instruction- student understanding • Need for adaptation/flexibility- based on learner need *Researcher prompts: "How do you think you might handle a problem such as this in the future? In the same way or a different way?"*

Levels of Reflection

Participants' written reflection journals were analyzed to answer the research question: What levels of reflection are participants able to achieve in their written reflection journals during their student teaching placement? Each of the journals were first descriptively coded and then coded using the depth of reflection table listed in Chapter 3 on page 55. Each weekly reflection was holistically coded as "non-reflector," "reflector," or "critical reflector," according to the highest level of reflection that the participant reached during that weekly entry. For instance, if some of the reflection statements were coded as "non-reflector", and some statements in the same week were coded as "reflector", the entire weekly reflection would be reported as "reflector" since that is the highest level that was achieved in that entry.

Participants' journals were collected and coded for level of reflection (see table two below) for the first two weeks, and then the researcher interacted with the participants by providing questioning and prompting from the framework (Appendix C) for weeks three through ten of the study. A list of prompts that were given in the study is attached as Appendix C. The levels of reflection were described in Table 1.

Researcher Prompting

The researcher added questions and comments to participants' journals, weekly, using the comment feature on Google Docs. Participants were told that they could reply in writing, or simply consider their answers to the questions in their head, and try to keep them in mind for the next journal entries. Two of the four participants chose to respond in writing, using the comment feature, and two of them chose to consider them silently.

Participants C and D chose to respond in writing to the researcher questions on their weekly journals. In week seven, the researcher wrote "Why do you believe this is so important for students and student learning?" in response to a statement Participant C made about developing more patience in the classroom. She responded, "From the discipline standpoint (which is where I struggle with being patient some days), I think it's important for me to understand that sometimes students act out because they do not understand the material and do not want their friends to know. So instead of giving a lunch detention right away all the time, I could try going over to the student and helping them one-on-one, which is something I've been working on." This weekly entry and response to the researcher was coded as critical reflector, since she identified a belief, confronted and changed that belief, and then let it inform her future actions. In week eight, also coded as critical reflector, the researcher prompted Participant C, "Do you think this solution will work on a different group of students? Is there something you would always do differently when explaining the directions or is this just an isolated incident?" Participant C responded,

“From now on, I am going to try and read the directions with them as a class, as another form of letting them hear the directions. Or I could try having them silently read the directions, and then as a class. I do think re-teaching is always a positive solution when necessary. It may throw off the unit plan, but when students do not understand the idea, they most likely won’t understand further ideas.”

Participant D also chose to respond to the researcher’s questions and prompts in writing using the comment feature. In the third week, the researcher wrote, “What do you think caused this change?” in response to her observation that the students are now taking initiative to ask for help. Participant D responded, “I think at this point, they saw how I was caring, and actually tried to help them. They have told me multiple times that teachers in the past didn’t put nearly as much effort as I have been to ensure they understand the content material.” This was then coded as reflector, based on her response, because she accessed her belief system to understand why a particular experience unfolded the way that it did. In another instance, the following week, the researcher questioned, “What about teaching the lessons multiple times makes you feel more confident and relaxed?” Participant D responded with, “I think the repetition of saying the same thing over and over, and thinking of new ones to say the same concept. I would think it’s like any actor/actress. I am sure during their first opening day that they are super nervous, but then by the fourth or fifth show, they’re masters and have the routine!” This entry was also coded as reflector. Participant D did not have any weekly entries that were coded as

critical reflections, but many times her responses to the researcher question were coded as reflector.

Participants A and B chose to consider the researcher's questions in their head and address them in future journal entries. Some of prompts that led to reflections and critical reflections are included in the next sections. The next sections will describe each of the levels of coding and provide participant examples from each, as well as some of the researcher prompts that elicited that type of reflective statement.

Non-reflector

Written reflections coded as "non-reflector" were descriptive accounts of what happened in the classroom, either what the teacher did or what the students did. Sometimes, these were very detailed and precise observations, but the participant did not draw any inferences or connect the experience to the surrounding context. These entries tended to be written in very concrete language.

Participant A had no journal entries that were holistically coded as "non-reflector" because he had reflective statements that were coded each week as either "reflector" or "critical reflector." While he always reached a higher level of reflection than "non-reflector" in his journal entries, some of the individual written reflection thoughts within the weekly entry were coded as "non-reflector." For example, in week one, he wrote about the makeup of students in each of the classes, and some of his ideas for future lesson plans. During week one, he also described conversations that he had with his cooperating teacher and wrote

down advice that his cooperating teacher shared with him. These written comments were coded as “non-reflector”, because they just recorded a conversation that occurred and did not relate it to past or future experiences.

In the following weeks, Participant A wrote descriptions of each of the lessons that he was teaching and/or observing to provide a backdrop for the rest of the lesson. He often wrote a description of the lesson in the first paragraph and then concluded with a description of upcoming lessons. For example, he wrote, “I finalized most of my plans for the Anglo-Saxon unit that I will begin teaching next week in College Prep English. I have two lesson plans for that unit in the Google drive, and the rest are nearly finished…” Another reflection statement by Participant A that was coded as “non-reflector” was a report on what the students were doing or how they were performing. This was coded as “non-reflector” because it simply gave a report what understanding students were demonstrating. He outlined instructional strategies he wanted to include to remedy the situation in bullet form, and these were also coded as “non-reflector.” For example, he wrote “Throughout the rest of the week, I did several things to bolster writing skills: gave specific instruction about the most common and significant problems I observed…” Participant A wrote very few reflective statements that were considered “non-reflector” in the last four weeks of the study, only using a few sentences to describe the context for his deeper levels of reflection preceding or succeeding the “non-reflector” statement.

Participant B had only one journal entry that was holistically coded as “non-reflector” because she did not progress past this level throughout the entire

weekly entry. In week four, Participant B described student behavior within the classroom and shared some feedback that her cooperating teacher had given to her on this classroom behavior and her response to it. She wrote, ”I held a brief conference with the student and let her know her behavior was inappropriate and if it continued she would be written up and the consequences would keep moving up every time it happened.” She did not evaluate how she handled the situation, examine it from any other viewpoint or confront her belief system regarding discipline during this entry therefore it was coded as “non-reflector.”

Other times, the entire reflection entry was coded as “reflector” or “critical reflector”, but there were statements or passages that Participant B wrote in these entries that would be classified as “non-reflector.” Sometimes these statements were advice or feedback from her cooperating teacher that she simply re-stated, but did not react to. At points, some of the “non-reflector” segments of the entry were descriptions of the lesson that she was teaching or how the students were behaving. For example, in week eight, she stated, “Earlier in the week, in English class, I had the students break up into partners (I chose them) and read parts of Books Nine and Ten of the Odyssey to each other and filled in guided notes about it.”

Participant C had two weekly journal entries that were holistically coded as “non-reflector.” During week three, she reported what the class had been doing up to this point in the year. After that, she discussed the co-teaching strategies that she and her cooperating teacher chose to use during the week, and finally, she reported the conversation she had with her cooperating teacher. All of these

instances were described without any of her interpretation or connections to other experiences. Later, in week six, she wrote another "non-reflector" weekly entry. During this entry, she discussed the preparations she would need to make to be ready to take over the classroom the following week. She stated, "Friday is an in-service day, so I plan on spending it in school, but working on getting my unit finished and classroom ready to go for next week, since I will be taking over."

During other weeks, she had statements or paragraphs that were coded as "non-reflector", but then she moved on to a different level of reflection at another point in the entry. In these statements, she described interactions she had with her co-teacher, and advice that was given in these interactions. She also reported some discipline/behavior policies that the school and her classroom abide by. Other "non-reflector" parts of the entries were about how students performed on an assignment. Often, she went on to connect this thought to other experiences and/or future plans, so it was just the statement that was coded as "non-reflector."

Participant D wrote three weekly journal entries that were coded as "non-reflector" holistically. Week three was coded as "non-reflector" because she reported what was being discussed in the way of content and what is coming next. She then reported the students' reactions to the material, but did not make any connections to her belief system or future practice. The fifth week's entry was also coded as "non-reflector." Participant D reported how students performed on an assessment that had been given recently and then described the next topic they would be working on. Lastly, week nine was considered "non-

reflector" as a whole entry. During this entry, she reported a student behavior situation and how it was handled, but did not go into details about why or connect it with other experiences. She then discussed the upcoming concepts that would be covered in class and reported that the principal observed the lesson and was pleased.

Other entries by Participant D were coded holistically as "reflector", but had "non-reflector" components within the entry. On these statements, she reported how students felt about content they were learning based on their emotional reactions. For example, she stated, "The students have to remain organized and I stressed that a lot. Some found out very quick." She also reported information on what content the students were learning at a particular point, when assessments would be scheduled, and how students performed on the assessments, often quantitatively.

Three of the four participants had at least one weekly journal entry that was coded, on the whole, as "non-reflector." All of the participants included reflective statements and ideas within their weekly journals that were individually coded as "non-reflectors." In some cases, there were descriptions stating background information that led to another thought, but in other cases, the reflection did not go further than the description level.

Reflector

Written reflections were coded as "reflector" when the participants were able to relate their experience to past or possible future experiences. They were also coded as "reflector" when the participants noted relationships between

knowledge and their feelings or how students were reacting. In this reflection level, they also identified experiences as not fitting into their previous schema of knowledge or past experiences. In some cases, the participants called into question some beliefs that they previously held. This reflection level accounted for most of the weekly reflections and most of the individual reflective statements for all four participants.

Participant A wrote three weekly journal entries that were coded holistically as “reflector.” In week one, he wrote, “I find that students are generally much more comfortable talking than writing, and often they just need someone to tell them that their spoken ideas are good, and then help guide them to put these ideas into writing.” During this reflection, he was identifying and beginning to confront his belief system regarding student motivation and writing. During week two, also coded as “reflector”, he wrote about how a misunderstanding led to not being prepared, how this affected the lesson and what he could do differently in the future. This showed that he noted relationships between his new knowledge and ways that he felt in the classroom. His journal entry for week five was coded as “reflector” because he wrote about how he felt there was an improvement in his lesson planning based on a conversation that he had with his supervisor. While he did look critically at the methods that were suggested, he did not connect it to a theme or belief about student learning.

In each of the other weekly written journal entries, he wrote at least one statement or paragraph that was coded as “reflector.” Often, these followed with

a section that was coded as “critical reflector”, but in a few instances, he ended with the “reflector” thought. Other examples of journal excerpts that were coded as “reflector” are: what he planned to do that may be different than other teachers; instructional goals (such as pacing himself); difficulties in concepts, student understandings and lessons; and improvements he feels as though he has made in his instruction. Each of these were coded as “reflector” because while he was identifying strengths and weaknesses, and sometimes called into question a previously-held belief, he did not write about these situations in context, accept multiple perspectives or talk about himself as a learner/grower.

Participant B wrote seven weekly journal entries that were coded holistically as “reflector.” For example, in week one, she wrote about experiences she witnessed and discussed how these experiences coincided with her belief system. In the next reflection, she identified her passion about teaching in urban education and listed some of the reasons why. She confronted her belief system regarding student behavior in that she was calling into question her belief about why students misbehave and hypothesized some possible reasons for this misbehavior. In week five, she wrote, “My lessons still have some bugs to work out. I am working on picking up the pace,” identifying some areas for personal growth. Another instance that was coded as “reflector” was when she identified discipline strategies that she used that had a positive impact on students. In the following week, Participant B discussed her beliefs regarding holding high expectations for all students, and said that belief was confirmed by student actions that week. During the final entry of the study, she wrote about

the idea that one thing that she felt negative about in the beginning of the experience, teaching the intervention group, had actually developed her teaching skills and pushed her to a positive challenge.

Participant C wrote four journal entries that were coded overall as "reflector." These four journal entries were all toward the beginning of the study. In week one, she discussed some of the beliefs and misconceptions that she had entering student teaching that proved to not be true during the first week. For example, she wrote about not being confident regarding co-teaching, but went on to explain how she viewed it as positive. During the second week, she reflected on the ideas surrounding why students were not engaged and participating positively in class, and discussed her desire to address these concerns and develop further as a teacher. In week four, she explained a change in her beliefs about what she wanted to do with the rest of her life, and shared the fact that now she felt confident that teaching was the field in which she felt best. She also discussed a discipline interaction with a student and reflected favorably on the situation, naming some of her beliefs that were confirmed because of the interaction. In week five, Participant C shared some instructional methods that she employed and then discussed what she might do differently next time based on the student response.

Participant C wrote many individual statements coded "reflector" in other journal entries that were holistically coded as "critical reflector." During week seven, she began the entry with a statement that was coded as "reflector", but then continued to a critical reflection. She shared the background for an

experience in which she did not go into school because of feeling ill and did not prepare in the way that she felt that she should have. She went on to explain the repercussions of making these choices and the lessons that she learned from this experience. In the final week's reflection, she wrote about the feelings associated with the placement ending and explained why she felt this sadness.

Participant D wrote seven reflections that were holistically coded as "reflector." During week one, she wrote about how the students were reacting to her caring attitude and why she felt this was so. In the second week, she wrote about feeling more comfortable as she continued to teach the lesson multiple times, and saying that she was able to work out some kinks. In week four, she wrote, "I am not comfortable with teaching a subject that I myself am not confident with, but by practicing I have gotten immensely better." Other reflective statements were about her style as a teacher and the students' response to such, some difficulties she ran into during a lesson and how she solved them, how she felt about developing more independence in the classroom, and how she needed to revise and revisit assessments.

Out of the three levels of reflection used for coding, "reflector" was used the most often. In some cases, students began as a "non-reflector" and progressed within the same weekly reflection to "reflector." In other cases, the participants continued to increase the depth of their reflection, but in many other cases, the student teachers stopped at the level of "reflector." These entries mostly consisted of the participants evaluating instructional methods, or

identifying some of their personal beliefs and assumptions that led them to act a certain way.

Critical Reflector

Journal entries that were coded as the highest level of reflection, "critical reflector" were entries in which the participant examined himself or herself individually in a critical manner. They wrote about an experience, placed the experience within a surrounding context and reflected on multiple perspectives about the incident. Sometimes, the participants suggested changes to future practice as a result of new learning that occurred, or incorporated knowledge from other sources, such as classwork or previous experiences. Not all participants wrote journal entries that were holistically coded as "critical reflector", because some had no critically reflective statements in their entries.

Participant A had five entries that were coded as "critical reflector." These entries were mainly in the second half of the study period. In week four, Participant A wrote, "I believe that the effort to analyze a text is more important than coming up with the 'correct' answer, and therefore I will continue working to encourage students to participate in the discourse," which showed that he identified a new belief and named his future actions based on this new belief. In week six, he wrote about his hesitancy with teaching the career English class at the beginning of the placement, but then reflected on how this experience helped him grow as a teacher. This reflection was in response to the researcher's question from the previous week, "How are you beginning to think differently about how these students learn based on these experiences?" In week seven, he

made a critically reflective statement about how his philosophy on grading an assignment had changed and what he intended to do with this new belief in order to change his instruction the following week. In the week prior, the researcher prompted with the following questions, “What beliefs do you have about student learning that might explain this? Are any of these beliefs being challenged from experiences within the classroom?” During the eighth week, he reflected about the culture in the building in which he worked and his disagreement with some overarching beliefs. He stated, “It’s very confusing sometimes because things I am being told are “wrong” are common practice among actual teachers..” This statement showed that he confronted a disconnect between what he previously thought to be true and his observed experiences within the building. Finally, in week 10, he reflected on differing advice that he was given from two different ‘experts’ within the school system. He went on to challenge some of this advice and decided that his belief was somewhere between the two expert opinions.

Participant B wrote two entries that were coded as “critical reflector.” These entries were week eight and week nine. During week eight, she wrote about some confusion regarding her beliefs about teaching in urban education or not because of the challenges that were associated with it. She described the situation of enforcing rules within the broader context of the school system and described the event from multiple perspectives. Later, in week nine, she wrote about herself critically in the way that she handled a discipline situation in the classroom, by stating, “I can see where I made my fatal error. I should have removed the troublemaker in the beginning of the class…” She went on to write

about how she would change her behavior if placed in the same situation in the future. These entries, although coded as critical reflector, did not address any of the questions or prompts the researcher had provided in the previous weeks.

Participant C wrote four entries that were coded as “critical reflector.” These were the last four entries of the study period. In week seven, she reflected on how she grew up and how that impacted her attitudes and actions as a teacher. She then discussed how she would need to change based on this, so she examined herself in a critical manner and related it to how she dealt with an experience in the classroom. The researcher questioned, “What do you believe to be true about co-teaching versus having your own classroom that might lead you to think this way?” Participant C responded, “I love co-teaching and my co-teacher has been a great resource. Sometimes I think the struggle of co-teaching is that two teachers can have different philosophies and since it is his classroom, I feel as though I need to run discipline problems by him sometimes.”

During the next weekly reflection, she reflected on an assignment that did not yield the results she expected. Within this reflection, she looked at possible reasons for this that she could have contributed to, and then named how she might change this way of acting in the future. This reflection was in response to the researcher question from the previous week, which asked, “What could explain this? What is true about students/motivation/learning in general that could apply to a new situation?” In week nine, Participant C confronted a belief that she had regarding student learning and then discussed how this belief differed from what was currently occurring in the classroom. In her final reflection, she

wrote “I know that those worksheets aren’t doing anything for the students, even though I am trying really hard to keep my expectations high and foster reflective questions. As I am starting to create my lesson plans for Egypt, I am trying to figure out ways…” Within these statements, she suggested a change in her practice instead of acting on routine and what has been done in the past, so this statement was coded as “critical reflector.”

Participant D did not write any journal entries that were coded as “critical reflector.” While the amount of “critical reflector” statements varied by participant, three out of the four participants made at least one entry in their written reflection journals and the larger portion of these statements were in the second half of the study. Sometimes, the “critical reflector” unit was just a statement, but because it reached that level of depth, the whole entry was coded as “critical reflector.” This was the highest level of reflection on this scale that the participants could have reached, and it yielded the fewest coded journal entries as such.

Reflection Summary

A table that summarizes each written reflection entry by week, by participant, and by reflection level is displayed below. The majority of journal entries were coded as “reflector” and most of the “critical reflector” entries occurred during the second half of the study.

Table 7

Reflection Level by Participant and Week Number

Written Reflection Week #	Participant A	Participant B	Participant C	Participant D
1 (no prompting provided)	reflector	reflector	reflector	reflector
2 (no prompting provided)	reflector	reflector	reflector	reflector
3	critical reflector	reflector	non-reflector	non-reflector
4	reflector	non-reflector	reflector	reflector
5	critical reflector	reflector	reflector	non-reflector
6	critical reflector	reflector	non-reflector	reflector
7	critical reflector	reflector	critical reflector	reflector
8	reflector	critical reflector	critical reflector	reflector
9	critical reflector	critical reflector	critical reflector	non-reflector
10	reflector	reflector	critical reflector	reflector

Significance of Scaffolding on Reflection

The researcher analyzed data to answer the research question: How does the use of scaffolding in a written reflection journal influence student teachers' perceptions of reflection as a professional practice? In order to answer this question, the researcher asked each participant the following questions in both a pre and post study interview:

- What is the process you go through for reflecting on lessons that you've taught? What steps do you normally take to complete the written reflection?
- When you are asked to reflect on a teaching situation, what do you typically choose to reflect on? Why is this what you tend to focus on?

The researcher compared the answers from each participant from the pre-study interview to the answers from the post-study interview to note any changes in participant's thinking. In the post-study interview, each participant was directly asked "Do you feel as though the feedback on your written reflection was helpful or not helpful to you? Why or why not?" Answers to these questions are discussed below as well. This section will be organized by data from each individual participant's interview.

Participant A

As discussed in the beginning of the chapter, Participant A shared in his pre-study interview that he thinks about students' understanding of specific skills that he taught, whether students were engaged or not in the lesson, and how he might get students to be more motivated to learn the material. In the post-study interview, Participant A's answer was very different. He started by explaining that he thought of the reflection more broadly, thinking about particular experiences or situations that stood out to him during that week. He went on to further explain that he thinks about whether these experiences have addressed any misconceptions he may have had about teaching or changed his belief system in any way. He stated, "Other times, I think I have… a lot of

preconceived notions about teaching because I've been a student for most of my life, so I just have engrained ideas about what it means to teach and I think part of becoming a good teacher is challenging some of those beliefs, so I always tried to take note of when something I always thought was true turned out to be not as effective as I thought or when I had to re-imagine a piece of my philosophy…"

In both interviews, Participant A was asked about what he chose to focus on during the reflections. In the pre-study interview, he named things that weight heavily on his mind, challenges and obstacles, successes, and student performance. In the post-study interview, he discussed again how he would note any changed beliefs. He went on to explain that he would write about particular strategies and their effectiveness in order to help himself make sense of the strategy and the student response to the strategy.

When asked directly if the scaffolding or questioning was helpful to him in his reflections, Participant A explained that it was helpful, however he felt confused in the beginning because he thought the researcher wanted him to arrive at a certain set of beliefs that he didn't already have. He said, "They were often helpful although I was curious when I was getting at something when you asked me if it was changing my beliefs. I was like, I wonder what beliefs I don't know? I didn't know if there was some kind of belief system you thought I should arrive at." He then went on, while he was scrolling through the comments and questions that were written, to describe how the questioning "helped emphasize to me that learning is an active process", which he stated he was trying to keep in

the forefront of his mind this semester. He felt as though the scaffolding/questioning were constant reminders to be tying his actions back to his beliefs and helped him understand what his beliefs actually were. He stated, "A lot of your comments picked up on that and made me think about what/how I was structuring my beliefs about how learning occurs."

Participant B

Participant B was asked the question in both the pre-study interview and the post-study interview "What is the process you go through for reflecting on lessons that you've taught?" In the pre-study interview, Participant B shared that she reflected on student understanding, engagement, behavior and the difficulty on her part to teach the lesson. In the post- study interview, she answered that she asks herself: Were students successful and willing to do the activity? Did the students enjoy it and could I as a teacher have done this differently. In both answers, she discussed levels of student understanding and engagement, but only in the post-study interview did she mention considering whether she would teach this differently another time, referencing future actions. She stated, "If I can get them to do what they need to do to learn what they need to learn, then I will stand on my head and spit wooden nickels at this point."

When asked what she typically tends to reflect on before the study began, Participant B answered that she tended to reflect on student engagement and behavior, how to incorporate music or technology, and how relevant the lesson is for the students. In the post-study interview, she reflected on student understanding of the lesson material and whether or not students were willing to

attempt the lesson activities. She went further into discussing motivation and said that she reflected on how she could motivate students. She stated, “They would literally not do homework- and the entire school won’t, so it’s not like you can punish two or three kids. It’s really hard. I found that motivation is the toughest thing.” Her post-study interview answer was much deeper in thinking about student motivation whereas the pre-study interview mostly focused on lesson planning choices that she, as the teacher, made.

When asked directly in the post-study interview if she felt as though the feedback or scaffolding the researcher provided on her written journal was helpful or not helpful to her, she responded, “I did find it helpful; it made me dig to a deeper level- I was kind of fluffing it up a little and you did, your comments did, make me stop and think and pick through it a little.” She went on to explain that she sometimes felt rushed when she wrote her initial reflection because she had many other things to do, and the questions provided by the researcher encouraged her to revisit the original reflection and try to get at the why, or the reason in which a particular situation unfolded the way that it did. She stated, “You know, you added a lot of validity to it by focusing on it.”

Participant C

In the pre-study interview, Participant C explained the process she normally goes through to reflect on lessons that she’s taught. She discussed how she thinks and/or writes about connections that she made with students, the level of student understanding for a particular lesson, what she might do differently in the future, positives about the lesson, and lessons she feels as

though she's learned. In the post-study interview, she explained a similar process in that she reflected on what changes she might make to the lesson if she taught it in the future, thought about if the students were engaged or not and the questions students asked about the content material. She said, "I always try to see how the day went, to see if there's a lot of questions being asked, if students seem engaged, what I could do differently or what I could have explained differently next time." In addition, she explained that she reflected about what she might do differently if this were her classroom that she could make her own decisions entirely, and discussed more deeply how she could make this particular lesson better in the future if she were to re-visit it, by asking, "I thought about what I could do differently if I ever had to teach this again, or if I ever wanted to teach this again, what could I do to make this a better lesson or a better project for the students?"

When asked what topics she typically chooses to reflect on, Participant C shared in the pre-study interview that she often thinks about what she could have done differently in the lesson, and wrote about what the cooperating teacher thought of her lesson. In the post-study interview, she gave a much more in-depth answer to this question, explaining each topic that she typically reflected on and why that topic was important. She stated that she often reflected on the behavior of students because behavior was such a large issue in the school that she was placed in. She said, "I start with behavioral things because behavior issues are a big problem at our school so I've always talked about that and how I've learned to handle them and how I've had more patience and I don't like to

kick kids out of class, so I rarely do that." She reflected on her methods of discipline and classroom management and how the students seemed to be responding to each. She stated that she typically reflects on what went well in the lesson, and student reactions to both the content material and her personal expectations and standards.

When directly asked if she found the researcher scaffolding helpful in the post-interview, she stated the prompts were helpful because they would give her different ideas about new topics to reflect on, stating, "Some of the questions you asked, I realized maybe I didn't explain myself or could explain myself better in the next reflection and it also made me think because I told (supervisor name) that I wanted to reflect on different things each time." She explained that she would use the prompting as a springboard to new reflection topics and approaches for subsequent journal entries. She said, "Since you don't want to reflect on the same thing every week, your questions really helped me figure out a different way to reflect or different things to reflect on."

Participant D

Participant D, explained in the pre-study interview, as discussed in the beginning of the chapter that she thinks about the positives and negatives of the lesson, and what did and did not work. She also reflected on where student confusion may have occurred. In the post-study interview, she described the same process that she goes through as she did in the pre-study interview, only adding that she also reflects about how she feels emotionally about the lesson that she's just taught.

When asked about the topics that she typically chose to reflect on, Participant D, pre-study, explained that she tends to reflect on student comprehension level of the material because, “the sole purpose of teaching is to help the students understand the new lessons we are throwing at them.” She also stated that she reflects on what with regard to her teaching caused student understanding to break down, and she often critically reflects on herself as a teacher. During the post-study interview, her answer was very similar. She stated that she reflects on students’ attitudes to help her gather information on how they felt about the content. She discussed reflecting on figuring out why students do not understand the material and how she might go about helping students understand the material that they need to understand. She said, “I think it all goes back to the main reason I want to teach. I want to help the kids, but I keep saying my purpose is if you don’t understand, I want to figure out why you don’t understand. There are times when I probably teach the same lesson six times in a period because I know what my students learn by.”

When asked if she found the scaffolding or questioning helpful, she responded, “It made me reflect on that different standpoint which helped me a lot.” She went on to describe the idea that she felt as though the prompting and questions provided her with a different viewpoint from which to look at various teaching situations and incidents. She mentioned that it was helpful to have an outside perspective from someone who was not directly involved with the class or teaching at that school. She said, “I was reflecting from my own personal

standpoint, so having someone else who doesn't know anything that's going on because you aren't here… I didn't even think about that scenario!"

Summary of Student Teacher Interviews

Three out of the four participants changed their thinking on the process they went through to complete a reflection and the topics they tended to reflect on throughout the duration of the study period. Each of these three participants either described a new aspect to their answer for each of these questions, or further explained their answer from the pre-study interview. All four of the participants described the feedback/scaffolding as helpful in probing their reflective thinking, each explaining ways that the scaffolds helped them think.

Perceived Value of Reflection of Cooperating Teachers

Interviews with cooperating teachers of each of the participants were used to gather data to answer the fourth research question, "What are cooperating teachers' perceptions of reflection as a professional practice?" In the interview, they were asked questions about their perceptions about what a 'reflective' student teacher looks like to them, how they typically chose to reflect or offer feedback to the student teacher who was placed with them, and whether or not they noticed the student teacher becoming more reflective throughout the experience. The researcher descriptively coded each of the interviews and determined themes from the interviews regarding the cooperating teachers' perceptions. The researcher then analytically coded each interview to determine if there was evidence of the themes found in the descriptive coding. Each theme is reported and described below.

Reflection Begins with Student Understanding and Engagement Questions

The first theme that emerged throughout the cooperating teacher interviews regarding their perceptions surrounding reflection as a professional practice is that they believed that the process of reflection began with asking oneself questions, often about student understanding of the lesson or student engagement. All of the cooperating teacher participants identified this as the starting point for someone who is reflecting on a lesson and how they began to have a reflective conversation with their student teacher.

Cooperating Teacher A identified realizing that students did not pick up on a particular concept or skill as a starting point in order to further hypothesize about possible reasons for the lack of understanding. She stated, "A reflective student teacher will come up to me after a lesson and say that they didn't think that went well… so they tend to get a general sense of how things are going and come to seek feedback about it right away." Cooperating Teacher B discussed the idea of using questions to lead the student or herself to reflect. In the interview, she said, "I think that's a good question for any teacher to ask themselves at the end of the day, you know, what did the kids learn today and were they engaged in the lesson?" She went on to state that she thinks a reflective practitioner has a set of questions that they ask themselves each day to stimulate reflection. She explained that she thought this makes reflection a more purposeful act.

Cooperating Teacher C noted that she chose to begin reflective conversations in the same way. "The approach is that you just sit down and have

a conversation- what worked today? What didn't work today?" Cooperating Teacher D also noted the concept of beginning with questions regarding student understanding and engagement to stimulate reflection by stating, "What went well? What didn't go well? I would really try to get her to reflect on her own lesson and just start that process for her so she could develop that ability and make that part of her own normal teaching repertoire where every lesson, you're reflecting." All of the cooperating teachers named starting asking questions about student understanding or engagement as a point to stimulate reflection, both for themselves and for the student teachers with whom they were guiding.

Reflection Involves a Change in Behavior

All of the cooperating teachers, at one point in their interview, discussed the idea that reflection involves some sort of change in behavior on the part of the one reflecting. Many of them mentioned that unless the reflection involves some sort of action stage, reflecting is not a valuable skill. Cooperating teacher A stated, "I think, for me, truly reflective people, not only do they question what they did, but then they act on that questioning. They are willing to look at practice, and make changes in it. For me, it has to have both parts, the actual reflection and then the action." Cooperating Teacher B described a similar belief, by saying, "They've written the lesson, they've done the lesson, and now they tweak. It's that tweaking piece that is really crucial. You can reflect all day and all night but if you don't change anything, it was all for naught." Both of these cooperating teachers went so far as to say that they did not believe there was a

value in reflection if there was no effort to make any changes to future practice based on those thoughts.

When asked what a reflective teacher looked like, Cooperating teacher C described one that “applies your ideas or some of their own ideas that they thought of to make adjustments. And their adjustments either work, or they make further adjustments throughout the day… They continue to adapt and change in a positive fashion. To me, that shows a reflective teacher.” Cooperating teacher D described a piece of reflection as identifying how the lesson went and what the reflective practitioner could do to change. Each of the cooperating teachers discussed reflection as at least a two-part process in which the final part of the reflection process is changing behavior or making changes to one’s own practice.

Reflection Involves Identifying Mistakes and Being Critical

Another theme throughout the cooperating teacher interviews was that the reflection process, a major component of it, involved identifying mistakes and taking steps to fix the mistake in some fashion. Not all of the cooperating teachers mentioned the word “mistakes” in their interviews, but all of them referenced figuring out something that went wrong with the lesson. In many cases, they did not include identifying positive outcomes in their reflection interview. Cooperating teacher A described an instance, which he viewed as reflection, in which the student teacher sought out the feedback of an instructional coach to help him identify some of the mistakes that he was making in his teaching. He said, “The kid I had was very reflective, and he went and tracked down our instructional coach and had her observe two different lessons

and then met with her too." Cooperating teacher B provided an example of how she would assist her student teacher in reflection throughout the day by identifying things that did not go well, and brainstorming possible solutions to fix these problems before the next lesson.

Cooperating Teacher C wrote about assisting others in reflection by helping them identify what did not go well within the lesson and discussing where the problem actually occurred, going on to state "you messed up on this, but it's not something you can't fix for next time." She identified a reflective teacher as one who looks back on their mistakes and adjusts or fixes those mistakes, or takes action to prevent them from happening again. Cooperating teacher D stated, "And that's where we would start building that reflection piece like I mentioned earlier, identifying where it started to go bad and why it started to go bad so it can be fixed." He went on to describe what he viewed to be a reflective teacher, which was one who could accept the blame and look at one's own actions critically for student misunderstandings. He explained the level of trust, openness, and honesty that is required for this type of 'critical reflection'. The three themes encompassed almost every coded piece of data from the cooperating interviews and each of the cooperating teachers made reference to each of the themes.

Summary

In this chapter, the data were presented by research question. For the first research question, the data were coded and themes and categories were identified. The themes and categories of the topic of participants' written

reflection journals were described, along with quotations from the written journals. Tables that described the topics and categories for each participant by week were also included. Next, the levels of reflection were reported, by giving a description of each of the levels of reflection and examples of excerpts from the journal entries that were coded at each level. The table that followed presented the level of reflection achieved by week number and participant. Then interviews and written reflection journals were examined to determine what significance participation in the study had on participants' perceptions of the value of reflection as a professional practice. This information was reported by participant. Finally, data were reported to answer the research question, "What perceptions do cooperating teachers have of reflection as a professional practice?" The data were organized by theme. The next chapter will include a discussion of the findings and implications for practice and future research.

CHAPTER FIVE

DISCUSSION

In this chapter, the researcher will discuss the findings of the study and interpret the data. The section will start with a summary of the purpose and research questions that guided the study and a summary of the findings that were reported in Chapter Four. After that, a discussion and interpretation of the findings will be given that links the data to the literature review. This section is organized by research question. Limitations of the study will be presented next, followed by recommendations by the researcher for practical implementation and for further study.

Purpose of Study/Research Questions

The purpose of this qualitative case study was to determine the significance that researcher scaffolding (questioning) or prompting had on student teachers' written reflection journals. The researcher provided prompts based on a researcher-developed framework based off of the work of Smyth (1989). Weekly, the researcher interacted with the student teachers by electronic document to ask them questions to prompt them to reflect on the next level of the framework than on which they were currently reflecting. Data were collected from student teachers' written journals and interviews with the student teacher participants and the cooperating teacher participants. The research questions that guided the study were:

1. What type of reflection do student teachers produce in written reflection journals when they have received instructor scaffolding?

a. What is the focus of participants' reflections in their written reflection journal during their student teaching placement?
b. What levels of reflection are participants able to achieve in their written reflection journals during their student teaching placement?

2. How does the use of scaffolding in a written reflection journal influence student teachers' perceptions of reflection as a professional practice?
3. What are the perceptions of cooperating teachers regarding reflection as a professional practice?

Discussion and Interpretation of Findings

Research Question 1a: Content of Written Reflections

The data were analyzed to answer the research question, "what is the focus of participants' reflections in their written reflection journal during their student teaching placement?" Each written journal was coded descriptively, themes were drawn, and then each was coded analytically by theme and category. Transcripts from interviews with student teacher participants and cooperating teachers were analyzed in the same way. Five themes emerged, with subcategories within each theme. The five themes of the focus of participants' written reflection journals were: emerging teacher identity, cooperating teacher or supervisor feedback, student response to instruction, the need to adapt/be flexible, and description and evaluation of instructional methods.

Khan (2014) wrote about a practical or technical dimension of reflection, in which the individual reflected on topics such as classroom management, lesson

delivery methods, student behaviors, available school resources, and individual learning needs of students. Three of the five themes identified as topics of student teachers' reflections in this study fell within this technical aspect of teaching and reflecting. The reflective statements within the topics of "description and evaluation of instructional methods," "need to adapt instruction/flexibility," and "student response to instruction" were primarily concerned with the technical or practical aspect of teaching. For example, "determining if the students understand the material and then brainstorming ways I can reteach to help them understand the material" was a topic that Participant D stated that she often reflected on. This is an example of the practical or technical dimensions. In a larger study, Mariko (2011) found similar topics to these as what students reflected on in their written journals: issues that arise when teaching, applying teaching pedagogy, learning or behavior problems, and curricular issues.

Interestingly, when asked in the pre and post study interviews about what they chose to reflect on, the themes described above were the most frequent answers, although all of the participants did also reflect on their emerging teacher identity. Only one participant shared this topic as something she reflects on in the post-study interview. These findings are congruent with the results of a study done by Khan (2014), which found that student teachers often have a more limited view of reflection than their professors or other experienced professionals do. Many of the student teacher participants in the current study may have only

identified the practical or technical aspects of teaching as something they typically reflect on because of this limited view of what reflection is.

Another theme that appeared in the current study's data was that the student teachers reflected on a cooperating teacher or supervisor's feedback that was given to them. They did not identify this theme in their pre or post study interviews as a topic on which they typically reflect, however it did appear frequently throughout all of the participants' journals. "I found it extremely helpful to have him (cooperating teacher) tell me that because otherwise I would not have known a better way to handle the situation," is a statement from a participant's written journal that fell within this theme. Stevenson and Cain (2013) found that most students reported that they felt as though an "outsider's perspective" was helpful in prompting them to reflect on a topic. Students often looked to their cooperating teachers and supervisor's feedback to guide them both in their future instruction and thoughts in their reflection journals. Schon (1987) wrote about reflection being the ability to look at events through the perspective of someone else, and the student teachers in the current study often looked to their supervisors and cooperating teachers to provide that reflection perspective for them. This finding can also be described by the research on the social nature of reflection, and how individuals often found that reflection was more effective when there was a social component involved (Connell, 2014).

The theme that emerged in the data that was the most critical was the theme of "emerging teacher identity." Within this theme, participants reflected on a changed or challenged belief system, feelings of comfort or confidence, or

identifying themselves as a teacher. Only one of the participants named this theme as something they chose to reflect on in the interviews, however this theme appeared in all four participants' journal entries. Reflections that fall under this theme are similar to what much of the research defines as productive reflection, or reflection that we can use to learn and make meaning from. Participants wrote statements, such as, "I want to open up more space for student interpretation in class- while still acknowledging my responsibility to guide discussion and provide context and critical perspectives," which showed an emerging teaching philosophy. Similarly, another participant wrote, "I felt as though the students look at me as a teacher and not just as a student teacher, which is refreshing because that is always a worry you have going into placement," which demonstrates that she is beginning to view herself in a teacher role. Questioning previously-held beliefs (McComish & Parsons, 2013), changing viewpoints (Mezirow,1997), forming one's own personal values and belief system, and making connections between learning theories and teaching practice (Dahl & Eriksen, 2015) were all identified as productive types of reflection in the research and appeared in the participants' journal entries. Student teachers did not identify themselves reflecting on this topic when directly asked. Perhaps this omission could be explained by the idea that they have a more limited view of what reflection is, often defining just the practical or technical side of it (Khan, 2014).

The findings of the first research question about what topics students chose to reflect on in their written journals aligned with much of the research that

had been previously done on written reflection journals and student teaching. A topic that could be investigated further is whether student teachers understood that they were reflecting on their changed beliefs in a critical way, or if it was a natural by-product of reflecting on the technical or practical aspects of teaching.

Research Question 1b: Depth of Written Reflections

While some of the participants showed a pattern of increasing their depth of reflections as the study progressed, there was a great variety in the number of reflector and critical reflector entries among the four participants. Rodgers (2002) found that a definition of reflection could be taught to students, however actually being reflective required a set of beliefs and attitudes on the part of the learner. It required the qualities of open-mindedness, responsibility for improvement, and directedness. This concept was illustrated in the results of the current study based on the disparity in the numbers of reflective entries, despite all of the participants receiving the same scaffolding and teaching on the concept of reflection. The participant who wrote the most journal entries coded at critical reflector described himself as a reflective person and his cooperating teacher described him in the same way. He regularly confronted his belief system and used experiences to inform future decisions, saying, “I believe the effort to analyze a text is more important than coming up with the right answer, and therefore I will continue to encourage students to participate in the discourse.” Further studies could ask the participant a question during the pre-interview to see whether or not the participant viewed himself or herself as a reflective

person. These variations could be due to their previous experiences, the levels of reflection of their cooperating teacher, their personality traits, or their upbringing.

In a study from 2015, Juklova found that many student participants remained at the description level of coding without further guidance from a professional. While all of the participants in the study received the same type of scaffolding, two of the participants chose to respond in writing to the questions and prompts, and two chose to just think about them in their heads. One of the participants who chose to respond in writing wrote the second highest number of critically reflective entries. In one of her entries, she wrote, “I know these worksheets aren’t doing anything for the students, even though I am trying really hard to keep my expectations high and foster reflective questions. As I am starting to create my lesson plans for Egypt, I am trying to figure out ways…” In this entry, she demonstrated that she identified a belief based on experience, confronted that belief and then changed her behavior. The other participant who chose to respond in writing did not write any critical reflector entries, however she did make comments that classified as reflector, after the prompt from the researcher that was written on her entries that classified as non-reflector.

Two entries written in the first five weeks of the study were coded as critical reflector, whereas nine entries written in the second five weeks of the study were coded as critical reflector. Similarly, there were four entries coded as non-reflector in the first half of the study period and two entries coded as non-reflector in the second half of the study period. This might demonstrate that the participants were prompted by the scaffolding to reflect in a deeper way, or that

as they developed more experiences and had more reflection modeled with their cooperating teacher, they were able to reflect at a deeper level.

Moore-Russo and Wilsey (2014) recommended that everyone should pay mind to the goal that instructors are aiming for in assigning the reflective activity. They caution about always assuming that critical reflection, because it is the highest level of reflection, is the best. The idea that critical reflection, in the views of cooperating teachers, is most desired is likely tied to their goals for the student teacher and the student teaching experience. Cooperating teachers, in their interviews, identified that reflection started with a problem. Because of this fact, it seems as though they would most desire that the reflection becomes critical in order to think of a solution to the problem.

Research Question 2: Impact on Student Teachers' Value of Reflection

Three of the four participants had a change in their answers from the pre-study interview to the post-study interview, signifying that their views on reflection had changed to reflect a deeper understanding. All four of the participants stated that they found the scaffolding that was provided to them by the researcher was helpful. The reasons they found it helpful included that it gave them new ideas of topics to reflect on, it helped them think of additional reasons that an event occurred, and it gave them a new perspective from which to view classroom problems. Participants claimed that the prompting and questioning "helped emphasize to me that learning is an active process", "dig to a deeper level", "made me stop and pick through it a little", "reflect on that different standpoint",

and “really helped me figure out a different way to reflect or different things to reflect on.”

These results reflect similar results to other studies that have been done regarding an experienced professional’s support and guidance in the reflection process. Participant A spoke about how he was confused about what the researcher was trying to get him to believe or think in the beginning. Details about the reflection scaffolding were not shared with him in the beginning of the study in order to add validity to the study. Coffey (2014) stated that prompts should have the purpose explained to the student teachers so they understand, and the prompts should be directed to the student teachers in order to facilitate critical reflection. Participant B shared that she felt as though the scaffolding helped her to reflect on a deeper level, and since she knew the researcher would be reading the journal, she decided to go back and revisit the entries. Two of the participants mentioned that they felt more responsible to put more effort into their reflections because another person would be reading and responding to it. Two of the participants mentioned that the prompting gave them additional insight, topics to reflect on, and perspectives to view situations from. These reports reflect the same findings from a study done by Rodgers (2002) that claimed that the benefits of social reflection were: validating the importance of an incident, being able to see multiple perspectives on a problem, and support in the questioning process. All of the participants seemed to benefit and appreciate participating in dialogic reflection with the researcher as it provided them with critical thinking and purpose.

Research Question 3: Perceptions of Cooperating Teachers' on Reflection

Interviews with cooperating teachers were analyzed in order to answer the research question, "What are the perceptions of cooperating teachers regarding reflection as a professional practice?" The interview transcripts were descriptively coded, themes were developed, and then they were analytically coded. Three themes emerged from the analysis. Cooperating teachers perceived that reflection should begin with student understanding and engagement, it involves a change in behavior, and reflection means identifying mistakes, fixing what is wrong, and being critical of oneself.

Both Dewey (1933) and Schon (1983) wrote about reflection beginning with a problematic or uncertain event. This problematic event created some type of confusion in the learner, which then prompted him or her to begin a cycle of reflection. All four of the cooperating teacher participants in the current study identified asking himself or herself some questions about student understanding and engagement as a place to begin reflection. They spoke about the need to identify things that did not go as planned in the lesson, and begin to hypothesize what went wrong and what can be changed. One cooperating teacher said, "A reflective student teacher will come up to me after a lesson… so they tend to get a general sense for how things are going," describing the questioning process he and the student teacher would engage in to begin the reflection. In the Pedagogical Model of Inquiry (Fly, Klages, and Venneman, 2013), this type of reflection was classified as the introspective inquiry phase and the didactic phase. During these phases of reflection, learners should identify experiences

that they have faced and evaluate how the experience went and possible reasons for it going that way. Participants in the current study identified "beginning by asking questions about student understanding and engagement" as how they chose to lead the reflective conversation after a lesson, and also identified this action as part of what they thought a reflective teacher should do. Perhaps the cause of this is that a goal of the student teaching experience is to further develop teaching skills, so the cooperating teachers viewed reflection, under this circumstance, as only being effective if it led to a development or refinement of pedagogy.

All of the cooperating teacher participants identified a change in behavior as a crucial component to effective reflection. A cooperating teacher participant stated, "They've written the lesson- they've done the lesson, and now they tweak. It's that tweaking piece that is really crucial. You can reflect all day and all night but if you don't change anything, it was all for naught." This idea is congruent with the philosophies of Schon (1983) and Kolb's Theory of Experiential Learning which both state that reflection serves as a guide to future actions and new beliefs. Mezirow (1997), in his Theory of Transformative Learning, stated that reflection leads to an individual acting on a new course of action. All of the major theories on reflection include this action step as a component; however, some of the models portray this step as a stage in a cycle rather than an ending stage. Each of the cooperating teacher participants spoke of the action-step as an end result and the ultimate goal of reflection for the student teachers they were working with.

Another theme among the cooperating teachers' perceptions of reflection included identifying mistakes and being critical of oneself as an effective form of reflection. For example, a cooperating teacher said, when describing reflection, "identifying where it started to go bad and why it started to go bad so it can be fixed." Being critical of oneself ensures that the learner owns his or her actions, attitudes, and beliefs on teaching and learning, and is not simply acting to reinforce existing beliefs (Harris et al., 2010). Some individuals believe that reflection that includes criticism of oneself should be classified as productive because it led to some sort of change in behavior or a new idea (Moore-Russo and Wilsey, 2014). None of the cooperating teachers named identifying positives or lessons that worked as an effective form of reflection. This omission could have been due to the fact that more experienced teachers tend to be able to identify "critical incidents", which someone with less experience might not notice or identify (Coffey, 2014). Based on this idea, the cooperating teachers might have viewed a teacher who did not recognize these criticisms, as not developing in experience yet. Some of the cooperating teacher participants did identify the need to feel more comfortable and be willing to take risks to exhibit this type of reflective behavior (Rodgers, 2002).

Overall, the cooperating teacher participants' perceptions surrounding reflection as a professional practice were congruent with much of the previous research. The participants in this study tended to focus on fixing a problem view of reflection that did not include the positives and what went well. This method of identification is likely due to the fact that student teaching is a time to develop

teaching and classroom management skills, so their focus is correcting misunderstandings.

Discussion

Overall, the participants' reflections got deeper, more critical, and changed throughout the study period. The participants reported that they felt as though the scaffolding helped them think about events from multiple perspectives, gave more purpose to their reflections, and helped them to think more critically. There were many more journal entries that were coded as critical thinker during the second half of the study as compared to the first. This pattern could be related to the scaffolding or because the participants were developing more experiences throughout the student teaching placement. While there was a general trend toward participants becoming more critically reflective, there was a high level of variation between participants' levels of reflection. Perhaps this is due to the differences in personality traits among participants, or the differences in experiences with cooperating teachers and supervisors. Two participants identified themselves as thoughtful and reflective people, and these participants had more critically reflective journal entries than the other two. One participant described his previous practice as, "A big concept or philosophical idea...I really write a lot of stuff down, so I do this kind of thing all the time." Different experiences with supervisors and cooperating teachers could have created very different opportunities for reflection and growth within their teaching experience.

The participants reflected on a wide range of topics, but only reported the technical and practical topics as ones that they reflected on. For instance, one

participant said that she reflected on, “behavioral things because behavior is a big deal here… what went well with the lesson… how the students reacted to the information.” This identification is congruent with much of the research that states that students without a wealth of experience have a limited view of reflection. Some themes of deeper reflection emerged within the participants’ journals, even though they did not identify them as a reflection topic. Perhaps the participants did not realize that recognizing and identifying their beliefs was something to reflect on and something that indicated deep levels of reflection. This limited view of reflection, namely critical reflection, indicates a need for student teachers to be directly taught definitions of and methods for reflection. Cooperating teachers had deeper perceptions of what reflection is than student teachers as they recognized that it examines one’s own beliefs, results in a change in action or assumptions, and begins with some type of critical incident.

This study illuminated the possibility of providing scaffolding to increase levels of reflection in student teachers. A specific framework was used by one researcher with a small sample size with positive results. There are many areas of this topic to still be explored. For example, different frameworks should be tested, additional people providing scaffolding should be used, and additional participants. Despite the limitations of the study, the results warrant further investigation into this topic and lead to some implications for practice for universities and university supervisors, cooperating teachers, and student teachers. The results also provide implications for additional research studies in this area.

Limitations of the Study

Based on the fact that this study was designed as a qualitative case study, it by nature has limitations for the results and transferability. Limitations of the study included the length of time of the study, similar demographic information of the student teaching participants, researcher involvement with the study, and varied student teaching experiences. Each of these limitations is further explained next.

A major limitation of the study was the duration of the study. The study was conducted for ten weeks because of the program length and other timing considerations. Because of this, it was difficult to see any type of growth or change that seemed significant. Given a longer observation period, perhaps even over a few semesters during field placements and student teaching, there would be additional data to validate findings and determine patterns of growth in reflections.

Another limitation was the fact that all of the student teachers had similar demographic information. All of the participants were from central Pennsylvania and the student teaching participants all attended one university. Because of these consistencies, their experiences in their teacher certification program and expectations placed on them for student teaching tended to be similar. Based on this fact, transferability of the results should only be assumed for student teachers with similar demographic information and a similar teacher certification program as the participants in the study.

Researcher involvement with the study is an additional limitation. The researcher provided the scaffolding on the written reflection journals and also conducted each of the interviews with the participants. Based on this involvement, the participants may have skewed their answers to the interview regarding their perceptions of the value of the scaffolding as to please the researcher. Also, because of her professional role, the researcher values reflection as a professional practice, so while there were measures taken to identify bias, total objectivity is not possible.

Each of the student teachers had very different student teaching experiences, based on his/her cooperating teacher and the value they placed on reflective practice, his/her supervisor, and the make-up of the students in the classes that he/she taught. Three of the participants had one student teaching supervisor, who required and responded to a written journal, and one of the participants had a supervisor who did not require a written reflection journal. Based on the fact that the interaction between each student teacher and his/her cooperating teacher is very different, it will likely produce very different conversations regarding reflecting on teaching and lessons. Some student teachers may have more reflective conversations that may have led to more reflective written journal entries. It is not possible to say that the researcher scaffolding causes any increase in depth of reflection or value placed on reflection because there are so many additional variables that contribute to these outcomes. Steps were taken to avoid bias and the limitations on the study,

however a few still exist. Based on this fact, readers should understand the limitations of the study and the need for additional research on this topic.

Recommendations

For Practical Implementation

Based on the results of the study and conclusions drawn, some practical implications can be recommended. University supervisors, cooperating teachers, and student teachers can all use the results and discussion to develop a better understanding of reflection and improve reflective practices during the student teaching placement. Practical suggestions based on the results of this study are explained below.

For teacher education programs and university supervisors. A practical implication for teacher education programs and university student teaching supervisors is the need for a consistent definition of reflection and similar practices for reflection among faculty in an education department. Many of the participants interviewed had a simplistic definition of reflection when asked about their practices. This definition of reflection only included practical and technical aspects of teaching, and did not reference their belief systems or future actions at all in the pre-study interview. In addition, researchers claim there is great confusion among educational professionals regarding a definition of reflection. If the department chooses to develop an operational definition for their purposes, it will help university supervisors to provide a consistent experience to student teachers. In this study, three of the student teachers had one supervisor, and one had a different supervisor. Their expectations for how and how often

they would complete written reflections were very different, and thus the level and type of reflections produced from the student teachers was very different. All of the student teaching participants said that they desired more structure and instruction on how to critically reflect in their teacher education program. If faculties choose to identify a basic philosophy, it will provide all student teachers with the opportunity to learn this lifelong professional skill.

Another suggestion for university faculty based on the results of this study is to provide the student teacher with feedback of some sort in their reflection journal. All of the participants named one of the things they liked about the journals is that they knew someone was reading it, and they felt accountable to them. They also all named valuing the feedback and questioning that was provided because it gave them a wider perspective on which to view the event. The feedback should be non-judgmental, but rather inquiry-based or based on thoughts to consider. This will ensure that the student teachers still feel as though the reflection journal is a safe and comfortable place to share their honest beliefs and assumptions so that they might get to the level of critical reflection.

A third practical implication would be to develop or adopt a framework, such as the one in Appendix C for guiding reflection that can be used among all faculty members supervising student teachers. This framework would allow all faculty members to use a method to encourage deeper levels of reflection. A consistent framework that is used from the beginning of the student teacher being sent into observation placements would help the student teacher develop his or her reflection skills over a longer period of time. It would provide the

student teacher with a ‘method’ or framework to follow when reflecting so that by the time the student teaching placement occurs, the student teachers would be able to use reflection to create the most valuable learning experience as possible and ensure that it results in transformative learning.

For cooperating teachers. One practical implication that emerged from this study for cooperating teachers is to identify critical incidents for a student teacher to reflect on. Research, and the participants of this study, stated that they felt as though it was helpful when someone pointed out an incident to prompt reflection, and that they might not have identified this incident on their own. Providing student teachers with some thought provoking questions on student response to instruction and also naming some incidents will help to provide a starting point for the student teachers.

Another practical implication is to model reflective thinking for the student teacher. The cooperating teachers in this study had a much deeper perception of and definition of reflection than the student teachers did. Because of this, it will be helpful for student teachers to hear their cooperating teacher model reflection, verbal or written, that addresses practical and technical aspects of teaching, but then expands to accessing belief systems, and talking about actionable changes that might be made. Hearing deep reflection being modeled will likely help provide the student teacher with a more complex view of reflection, thus helping them reflect on a deeper level, making more meaning from their experience.

Student teachers often reflected on the feedback they received from their cooperating teachers, identifying it as valuable. A practice that is supported by this research is continuing to provide written and verbal feedback to the student teacher as often as possible. This feedback could include both engaging them in reflective conversations and giving some suggestions for future practice in order to help them develop some additional experiences. Support and guidance from an experienced professional is supported by past research (Harris et al., 2010; Christof, 2014; Coffey, 2014; Dahl & Eriksen, 2015; Moussa-Inaty, 2015) and the current study as helpful to development of student teachers' reflective and teaching skills.

For student teachers. A finding of this study is that the more student teachers reflect with support and feedback, the deeper their reflections tend to become. Deeper levels of critical reflection are believed to be how transformative learning and meaning making occurs. Many of the participants shared in their interviews that reflection tended to become something that was just on their to-do list and they wrote in their journals "just to get it done." The same participants later identified the reflection journals as something that greatly contributed to their learning and the development of their teaching skills.

Another practical implication from the results of this study is that it is valuable to share written reflection and seek feedback from others. Discussing or sharing the reflections in a social setting allows for the learner to discover multiple perspectives, rather than be limited to their own perspective on the incident. Feedback from a professional also helped to prompt the reflections to

become deeper and more meaningful in the eyes of the participants of this study. If not required by their university, the student teacher should seek out feedback on their reflection journal from a cooperating teacher, university supervisor, or seek peer feedback.

For Further Study

Based on the results of this study and the limitations of the study, recommendations for further research on this topic are described next. Recommendations for future research on the topic of depth of written reflection journals of student teachers are studies that consider: additional time in length of study, a larger group of participants, longer period of time to show reflective growth, ties to other factors, and studies conducted with the researcher not involved.

A study should be conducted that has a longer time during the study period for student teachers to interact with the scaffolding and prompting. In the present study, the participants received scaffolding feedback on their journal for eight weeks. While this length of time allows the researcher to draw some conclusions, a study that provided similar feedback for a longer period of time would allow the student teachers to internalize and understand the feedback much better. A longer study period could possibly lead to different results, which would provide information on length of time needed for guidance from an experienced professional to encourage students to reflect more deeply.

An additional study that has a larger sample would be valuable to consider. The present study had four participants, based on the researcher's

ability to gather participants that fit the study criteria. While four participants provided the researcher with their individual perceptions on reflection, it is difficult to determine if these differences are due to personality traits alone or due to the scaffolding received in the study. A larger sample size would allow the researcher to examine different variables in demographics, such as age, experience level, and personality traits.

A longitudinal study should be performed, using the same research questions. The longitudinal study would allow for the researcher to notice the difference in perceptions and depth of reflection from the beginning of the teacher certification program to the end of student teaching. This type of study would allow the researcher to track students' perceptions as they progressed from very little teaching experience, to beginning to develop teaching experience through placements of their own and observations.

Another future area for research is the connection between reflection perceptions and other factors, such as student teacher effectiveness. Additional data should be collected through observations, and reports from the supervisors and cooperating teachers. The purpose of the current study was to understand reflection to foster more effective teachers, thus leading to greater student achievement. A study that includes this component as an additional factor being measured would help to make the connection more sound and a greater impact on professional practice.

A study that identifies certain personality traits within student teachers before they begin the student teaching would help to determine if the personality

traits affect reflection more than the scaffolding does. Understanding how reflective the participant tends to be before the study would help to determine if reflectiveness is a pre-determined skill or it can be molded with scaffolding and prompting in a journal.

An additional area for future research is conducting a similar study to the current one, however without as much researcher involvement. Choosing multiple people to provide the scaffolding and feedback would help to transfer the results to other experienced professionals as providers of the scaffolding, instead of just the researcher. This additional measure would ensure that it is not just the researcher's knowledge of reflection that would make him/her able to use the scaffolding framework. Using additional professionals to provide the feedback and conduct the interviews would also perhaps allow student teacher participants to be more truthful about their perceptions of the feedback, as the interview was not being conducted and analyzed by the person who provided the feedback. Performing this study with additional researchers, so that the primary researcher could just analyze the data and draw conclusions, would help to make the study more objective.

The current study illuminated pieces of information that are worth further investigation in future studies. While the concept of reflection is written about extensively in the literature, it remains a topic that is difficult to conduct empirical research on. By examining different pieces of the concept at a time, it will make the topic of reflection more visible, measurable, and hopefully provide instructors with a method of encouraging deep reflection in student teachers.

Summary

With increased responsibilities, accountability, and pressure placed on teachers regarding student learning, teachers relying on routine behavior alone will no longer be sufficient. Based on this fact, reflection is an important skill that will lead to lifelong learning and professional development for a teacher. This skill can and should be encouraged and cultivated during the undergraduate education program, especially during student teaching. While research demonstrated that reflection was an important and worthy skill (Beavers, 2009; Sarsar, 2008), and could be taught (Gay & Kirkland, 2003; Hoffman-Kipp, Artiles, & Lopez-Torres, 2003; Putman, Smith & Cassady, 2009), the research was very limited in methods of teaching and encouraging critical reflection among teacher education students.

This study attempted to fill that gap in research by investigating the significance of a researcher-developed scaffolding framework that could be used to foster critical reflection. The researcher provided questions and prompts to the student teacher participants using a scaffolding framework to encourage the students to consider the next level of reflection based on Smyth's (1989) work on critical reflection. Two of the participants chose to respond to the researcher's prompting in writing and two chose to consider the prompts mentally. At the conclusion of the study, student teacher participants and cooperating teacher participants were interviewed regarding their perceptions of their participation in the study and reflection practices in general.

Overall, as a result of participating in the study and/or gaining more experience in reflection, participants developed a deeper understanding of a definition of reflection, increased the level of depth of reflection throughout the course of the study, and reported that participation in the study helped them reflect deeper and more meaningfully. The results of this study reinforce the importance of the support of an experienced professional throughout a student's development of reflection skills. This study details one method of fostering critical reflection, but the results illuminate many additional possibilities regarding strategies for teaching and encouraging reflection in undergraduate education programs.

Finding an effective method to cultivate reflection in pre-service teachers allows for transformative learning (Mezirow, 1997) and meaning making to occur during the student teaching placement. Through encouraged critical reflection, experiences within the student teaching placement can challenge student teachers' belief systems, and help them develop a personal philosophy that guides their future actions. Teachers continue to face a rapid pace of new information, teaching methodology, and student needs and the only professional development skill that allows them to keep up with this ever-changing world is being critically reflective of their own practice and actions. Teachers owe it to their students to encourage the type of learning that students will need in the twenty-first century, and this will not happen if they operate on routine actions alone.

This study provides a starting point for universities to look at how their program encourages critical reflection as a professional skill in their undergraduate course sequence. While this specific framework may not work for different groups of student teachers, the study illuminates many valuable things to consider when evaluating student development in an education program. Identifying ways to foster and cultivate critical reflection in student teachers is one of the best ways to equip them to be productive, effective, master teachers in the ever-evolving field of education.

References

Ajayi, L. (2011). Teaching alternative licensed literacy teachers to learn from practice: A critical reflection model. *Teacher Education Quarterly, 38(3),* 169-189.

Beavers, A. (2009). Teachers as learners: Implications of adult education for professional development. *Journal of College Teaching and Learning, 6(7),* 25-30.

Boden, C. J., Cook, D., Lasker-Scott, T., Moore, S., & Shelton, D. (2006). Five perspectives on reflective journaling. *Adult Learning, 17(1),* 11-16.

Brock, S. E. (2010). Measuring the importance of precursor steps to transformative learning. *Adult Education Quarterly, 60(2),* 122-142. http://dx.doi.org.proxy-iup.klnpa.org/10.1177/0741713609333084.

Buzdar, M., & Ali, A. (2013). Development of reflective thinking through distance teacher education programs at AIOU Pakistan. *The International Review of Research in Open and Distance Learning 14(3),* 44-56. http://dx.doi.org/10.19173/irrodl.v14i3.1350.

Campoy, R. (2000). Teacher development: Fostering reflection in a poststructural era. *Contemporary Education, 71(2),* 33-41.

Chabon, S. S., & Lee-Wilkerson, D. (2006). Use of journal writing in the assessment of CSD students' learning about diversity: A method worthy of reflection. *Communication Disorders Quarterly, 27(3),* 146-158. http://dx.doi.org/10.1177/15257401060270030301

Christof, E. E. (2014). Reflective ability as a core competence of future teachers. *BCES Conference Precedings 12,* 114-120.

Clara, M. (2015). What is reflection? Looking for clarity in an ambiguous notion. *Journal of Teacher Education, 66(3),* 261-271. http://dx.doi.org/10.1177/0022487114552028.

Clarke, A. (1995). Professional development in practicum settings: Reflective practice under scrutiny. *Teaching & Teacher Education, 11(3),* 243-261. http://dx.doi.org/10.1016/0742-051X(94)00028-5.

Coffey, A. M. (2014). Using video to develop skills in reflection in teacher education students. *Australian Journal of Teacher Education, 39(9),* 86-97. http://dx.doi.org/10.14221/ajte.2014v39n9.7.

Connell, M. T. (2014). Recovering the social dimension of reflection. *Catholic Education: A Journal of Inquiry and Practice, 17(2).* 5-23.

Connor-Greene, P.A. (2000). Making connections: Evaluating the effectiveness of journal writing in enhancing student learning. *Teaching of Psychology, 27(1),* 44-46.

Convery, A. (1998). A teacher's response to reflection-in-action. *Cambridge Journal of Education, 28,* 197-205. http://dx.doi.org/10.1080/0305764980280205.

Creswell, J. W. (2007). *Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage.

Cronbach, L. J. (1975). Beyond the two disciplines of scientific psychology. *American Psychologist, 30,* 116-127. http://dx.doi.org/10.1037/h0076829.

Dahl, H., & Eriksen, K. A. (2015). Students' and teachers' experiences of participating in the reflection process "THiNK." *Nurse Education Today.*

Danielson, C. (1996). *Enhancing professional practice: A framework for teaching.* Alexandria, VA: Association for Supervision and Curriculum Development.

Darling-Hammond, L. & Richardson, N. (2009). Teacher learning: What matters? *Educational Leadership, 66(5),* 46-53.

Dewey, J. (1933). *How we think, a restatement of the relation of reflective thinking to the educative process.* Boston, MA: D.C. Heath & Company.

Dimova, Y., & Kamarska, K. (2015). Rediscovering John Dewey's model of learning through reflective inquiry. *Problems of Education in the 21st Century, 63,* 29-39.

Dinkelman, T. (1997). The promise of action research for critically reflective teacher education. *The Teacher Educator, 32,* 250-274. http://dx.doi.org/10.1080/08878739709555151.

Dyment, J. E., & O'Connell, T. S. (2014). When the ink runs dry: Implications for theory and practice when educators stop keeping reflective journals. *Innovation in Higher Education, 39,* 417-429. http://dx.doi.org/10.1007/s10755-014-9291-6.

Etscheidt, S., Curran, C. M., & Sawyer, C. M. (2012). Promoting reflection in teacher preparation programs: A multilevel model. *Teacher Education and Special Education, 35(1),* 7-26. http://dx.doi.org/10.1177/0888406411420887

Farrell, P. (2015). Teacher-research and the art of the professional experiment: Reflective practice in the practical-knowledge tradition. *International Journal of Language Studies, 9(1),* 1-22.

Farrell, T. C., & Ives, J. (2015). Exploring Teacher Beliefs and Classroom Practices through Reflective Practice: A Case Study. *Language Teaching Research*, *19*(5), 594-610.

Fry, J., Klages, C., & Venneman, S. (2013). Using a written journal technique to enhance inquiry-based reflection about teaching. *Reading Improvement, 50(2),* 54-60.

Garrison, J. (2013). 2012 Dewey lecture: Making meaning together beyond theory and practice. *Education and Culture, 29(2),* 5-23.

Garvis, S., & Pendergast, D. (2015). Thinking differently about infants and toddlers: Exploring the reflections of future Australian early childhood teachers in Australia. *Australian Journal of Teacher Education, 40(4),* 118-131. http://dx.doi.org/10.14221/ajte.2015v40n4.7.

Gay, G., & Kirkland, K. (2003). Developing critical consciousness and self-reflection in preservice teacher education. *Theory into Practice, 42(3),* 181-187. http://dx.doi.org/10.1207/s15430421tip4203_3.

Gelfuso, A., & Dennis, D.V. (2014). Getting reflection off the page: The challenges of developing support structures for pre-service teacher reflection. *Teaching and Teacher Education, 38,* 1-11. http://dx.doi.org/10.1016/j.tate.2013.10.012.

Giaimo-Ballard, C., & Hyatt, L. (2012). Reflection-in-action teaching strategies used by faculty to enhance teaching and learning. *Networks, (14)2,* 1-11.

Gillham, B. (2010). *Case study research methods.* London, GB: Continuum.

Greiman, B. C. & Covington, H. K. (2007). Reflective thinking and journal writing: Examining student teachers' perceptions of preferred reflective modality, journal writing outcomes, and journal structure. *Career and Technical Education Research, 32(2),* 115-139. http://dx.doi.org/10.5328/CTER32.2.115.

Harris, A. S., Bruster, B., Peterson, B., & Shutt, T. (2010). *Examining and facilitating reflection to improve professional practice.* Lanham, MD: Rowman & Littlefield.

Hatch, J. A. (2002). *Doing qualitative research in education settings.* New York, NY: State University of New York Press.

Hawkins, D. (1973). What it means to teach. *Teachers College Record, 75(1),* 7-16.

Healey, M., & Jenkins, A. (2000). Kolb's experiential learning theory and its application in geography in higher education. *Journal of Geography, 99(5),* 185-195. http://dx.doi.org/10.1080/00221340008978967.

Hettich, P. (1990). Journal writing: Old fare or nouvelle cuisine? *Teaching of Psychology, 17,* 36-39. http://dx.doi.org/10.1207/s15328023top1701_8.

Hiebert, J., Morris, A.K., Berk, D., & Jansen, A. (2007). Preparing teachers to learn from teaching. *Journal of Teacher Education, 58(1),* 47-61. http://dx.doi.org/10.1177/0022487106295726.

Hoffman-Kipp, P., Artiles, A. J., & Lopez-Torres, L. (2003). Beyond reflection: Teacher learning as praxis. *Theory into Practice, 42(3),* 248-254. http://dx.doi.org/10.1207/s15430421tip4203_12.

Hooey, C. A., & Bailey, T. J. (2005). Journal writing and the development of spatial thinking skills. *Journal of Geography, 104,* 257-261. http://dx.doi.org/10.1080/00221340508978647.

Hutchinson, C., & Allen, K. (1997). The reflection integration model: A process for facilitating reflective learning. *The Teacher Educator, 32,* 226-234. http://dx.doi.org/10.1080/08878739709555149.

Jado, S. M. A. (2015). The effect of using learning journals on developing self-regulated learning and reflective thinking among pre-service teachers in Jordan. *Journal of Education and Practice, 6(5),* 89-103.

Jarvis, J., Dickerson, C., Thomas, K., & Graham, S. (2014). The Action-reflection-modelling (ARM) pedagogical approach for teacher education: A Malaysia-UK project. *Australian Journal of Teacher Education, 39(3),* 89-118. http://dx.doi.org/10.14221/ajte.2014v39n3.2.

Jones, J. L., & Jones, K. A. (2013). Teaching reflective practice: Implementation in the teacher education setting. *The Teacher Educator, 48,* 73-85. http://dx.doi.org/10.1080/08878730.2012.740153.

Jorgensen, C. G. (2015). Discovering a route to revitalize the foundations of education: Reflective thinking from theory to practice. *Educational Foundations, 2015,* 121-133.

Juklova, K. (2015). Reflection in prospective teacher training. *ScienceDirect, 171,* 891-896. http://dx.doi.org/10.1016/j.sbspro.2015.01.206.

Kayes, D.C. (2002). Experiential learning and its critics: Preserving the role of experience in management learning and education. *Academy of Management Learning & Education, 1(2),* 137-149. http://dx.doi.org/10.5465/AMLE.2002.8509336.

Kessler, L. A., & Burns-Whitmore, B. (2011). Student perceptions of reflection tools used in a service learning community nutrition course. *NACTA Journal,* 67-69.

Khan, M. I. (2014). Reflection in initial teacher education: Case for a comprehensive framework. *FWU Journal of Social Sciences, 8(2),* 8-15.

Khan, M. I., Fazal, S., & Amin, M. (2014). Reflection in teacher education programmes in Pakistan and the UK: A comparison. *Journal of Research and Reflections in Education, (8)2.* 132-138.

Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education, 4(2),* 193-212. http://dx.doi.org/10.5465/AMLE.2005.17268566.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Englewood Cliffs, NJ: Prentice-Hall.

Lamm, A. J., Cannon, K. J., Roberts, T. G., Irani, T. A., Snyder, L. U., Brendemuhl, J., & Rodriguez, M. T. (2011). An exploration of reflection: Expression of learning style in an international experiential learning context. *Journal Of Agricultural Education*, *52*(3), 122-135. http://dx.doi.org/10.5032/jae.2011.03122.

Lapan, S. D., Quartaroli, M.T., & Riemer, F.J. (Eds). (2011). *Qualitative research.* Hoboken, NJ: Jossey-Bass.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry.* Thousand Oaks, CA: Sage.

Maalkki, K. (2010). Building on Mezirow's theory of transformative learning: Theorizing the challenges to reflection. *Journal of Transformative Education, 8(1),* 42-62. http://dx.doi.org/10.1177/1541344611403315.

Marcos, J. M., Sanchez, J. & Tillema, H. H. (2011). Promoting teacher reflection: What is said to be done. *Journal of Education for Teaching: International Research and Pedagogy, 37(1),* 21-36. http://dx.doi.org/10.1080/02607476.2011.538269.

Mariko, S. (2011). Student teachers' reflective journals on teaching practice experiences. *DWU Research Journal, 14,* 67-83.

Maxwell, J. A. (2013). *Qualitative research design: An interactive approach.* Thousand Oaks, CA: Sage.

McComish, D., & Parsons, J. (2013). Transformational learning and teacher collaborative communities. *New Zealand Journal of Teacher's Work, 10(2),* 239-245.

Merriam, S. (2009). *Qualitative research.* San Francisco, CA: Jossey-Bass.

Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education, 74,* 5-12. http://dx.doi.org/10.1002/ace.7401.

Monet, J. A., & Etkina, E. (2008). Fostering Self-Reflection and Meaningful Learning: Earth Science Professional Development for Middle School Science Teachers. *Journal Of Science Teacher Education*, *19(5),* 455-475. http://dx.doi.org/10.1007/s10972-008-9106-7.

Moore-Russo, D. A., & Wilsey, J. N. (2014). Delving into the meaning of productive reflection: A study of future teachers' reflections on representations of teaching. *Teaching and Teacher Education, 37,* 76-90. http://dx.doi.org/10.1016/j.tate.2013.10.002.

Moussa-Inaty, J. (2015). Reflective writing through the use of guiding questions. *International Journal of Teaching and Learning in Higher Education, 27(1),* 104-113.

Muhammed, A. Q., & Hamid Khan, N. (2012). Impact of effective teachers on students' academic achievements. *Journal of Educational Research, 15(1),* 30-38.

Pariser, D. (2014). Coping with flying sandwiches: Where's the educational theory? *Studies in Art Education: A Journal of Issues and Research, 55(4),* 300-312.

Porntaweekul, S., Raksasataya, S., & Nethanomsak, T. (2015). Development of the reflective thinking instructional model for student teachers. *International Forum of Teaching and Studies, 11(1-2)* 24-32. http://dx.doi.org/10.5176/2251-1814_EeL12.118.

Pultorak, E. G., & Barnes, D. (2009). Reflectivity and teaching performance of novice teachers: Three years of investigation. *Action in Teacher Education, 31(2),* 33-45. http://dx.doi.org/10.1080/01626620.2009.10463516.

Putman, S. M. , Smith, L. L. & Cassady, J. C. (2009). Promoting change through professional development: The place of teacher intentionality in reading instruction. *Literacy Research and Instruction, 48,* 207-220.

Reeves, P. (2010). *Transforming professional development into student results.* Alexandria, VA: ASCD.

Reinertsten, P. S., & Wells, M. C. (1993). Dialogue journals and critical thinking. *Teaching Sociology, 21,* 182-186.

Richards, J. C. & Lockhart, C. (1994). *Reflective teaching in second language classrooms.* New York: Cambridge University Press.

Richards, L. (2005). *Handling qualitative data.* London: Sage.

Ricks, T. E. (2011). Process reflection during Japanese lesson study experiences by prospective secondary mathematics teachers. *Japanese Math Teacher Education, 14,* 251-267. http://dx.doi.org/10.1007/s10857-010-9155-7.

Rodgers, C. (2002). Defining reflection: Another look at John Dewey and reflective thinking. *Teachers College Record, 104,* 842-866. http://dx.doi.org/10.1111/1467-9620.00181.

Roskos, K., Vukelich, C., & Risko, V. (2001). Reflection and learning to teach reading: A critical review of literacy and general teacher education studies. *Journal of Literacy Research, 33(4),* 595-635. http://dx.doi.org/10.1080/10862960109548127.

Saldana, J. (2013). *The coding manual for qualitative researchers, 2nd ed.* Thousand Oaks, CA: Sage.

Sammut, K. (2014). Transformative learning theory and coaching: Application in practice. *International Journal of Evidence Based Coaching and Mentoring, 8,* 39-53.

Sarsar, N. M. (2008). *Adopting a reflective approach to professional development*. Retrieved from http://search.proquest.com/docview/61991194?accountid=11652.

Schon, D. (1983). *The reflective practitioner: How professionals think in action.* New York, NY: Basic Books.

Shapiro, H. (2010). John Dewey's reception in "Schonian" reflective practice. *Philosophy of Education Yearbook, 311-319.*

Sharma, S., Phillion, J., & Malewski, E. (2011). Examining the practice of critical reflection for developing pre-service teachers' multicultural competencies: Findings from a study abroad program in Honduras. *Issues in Teacher Education, 20(2),* 9-22.

Singh, S. K., & Mabasa, L. T. (2015). Using student-teachers' reflections in the improvement of a teaching practice programme at the University of Limpopo. *South African Journal of Higher Education, 29(3),* 168-182.

Smyth, J. (1989). Developing and sustaining critical reflection in teacher education. *Journal of Teacher Education, March-April,* 1-8. http://dx.doi.org/10.1177/002248718904000202.

Snyder, C. (2012). Finding the "royal road" to learning to teach: Listening to novice teacher voices in order to improve the effectiveness of teacher.

Stake, R. E. (1995). *The art of case study research.* Thousand Oaks, CA: Sage.

Stanley, C. (1998). A framework for teacher reflectivity. *TESOL Quarterly, 32(3).* 584-591. http://dx.doi.org/10.2307/3588129.

Stevenson, H. J., & Cain, K. J. (2013). Talking to paper doesn't work: Factors that facilitate preservice teacher reflection. *Teacher Education Quarterly.* 75-88.

Svojanovsky, P. (2014). What is the goal of reflective practice in teacher education: Social justice or personal development? *Social Justice and Diversity in Teacher Education,* 207-224.

Swanwick, R., Kitchen, R., Jarvis, J., McCracken, W., O'Neil, R., & Powers, S. (2014). Following alice: Theories of critical thinking and reflective practice in action at a postgraduate level. *Teaching in Higher Education, 19(2),* 156-169. http://dx.doi.org/10.1080/13562517.2013.836099.

Tok, S., & Dolapcioglu, S. D. (2013). Reflective teaching practices in Turkish primary school teachers. *Teacher Development, 17(2),* 265-287. http://dx.doi.org/10.1080/13664530.2012.753940.

Van der Schaaf, M., Baartman, L., Prins, F., Oosterbaan, A., & Schaap, H. (2013). Feedback dialogues that stimulate students' reflective thinking. *Scandanavian Journal of Educational Research, 57(3),* 227-245. http://dx.doi.org/10.1080/00313831.2011.628693.

Van Manen, M. (1977). Linking ways of knowing with ways of being practical. *Curriculum Inquiry, 6,* 205-228. http://dx.doi.org/10.2307/1179579.

Venable, S. (2014). Introducing the implementation of blogs as reflection tools for teacher education candidates. *National Teacher Education Journal, 7(2),* 37-41.

Vygotsky, L. S. (1987). Thinking and speech. In L. S. Vygotsky, Collected works (vol. 1, pp. 39–285) (Rieber, R. & Carton, A., Eds; Minick, N., Trans.). New York: Plenum.

Walker, S. E. (2006). Journal writing as a teaching technique to promote reflection. *Journal of Athletic Training, 41(2),* 216-221.

Wieringa, N. (2011). Teachers' educational design as a process of reflection-in-action: The lessons we can learn from Donald Schon's *The Reflective Practitioner* when studying the professional practice of teachers as educational designers. *Curriculum Inquiry, 41(1),* 167-174.

Williams, J., & Power, K. (2009). *Using core reflection in teacher education.* Refereed paper presented at 'Teacher education crossing borders: Cultures, contexts, communities and curriculum' at the annual conference of the Australian Teacher Education Association (ATEA), Albury, 28 June-1 July.

Wilson, T., Perry, M., Anderson, C. J., & Grosshandler, D. (2012). Engaging young students in scientific investigations: Prompting for meaningful reflection. *International Journal of the Learning Sciences, 40(1),* 19-46. http://dx.doi.org/10.1007/s11251-011-9168-3.

Wong, F. K., Kember, D., Chung, L. Y., & Yan, L. (1995). Assessing the level of student reflection from reflective journals. *Journal of Advanced Nursing, 22,* 48-57. http://dx.doi.org/10.1046/j.1365-2648.1995.22010048.x.

Xie, Y., & Sharma, P. (2013). Examining students' reflective thinking from keywords tagged to blogs: Using map analysis as a content analysis method. *Interactive Learning Environments, 21(6),* 548-576.

Yarosz, D. J., & Fountain, S. W. (2004). Facilitating reflection among family literacy participants. *Inquiry: Critical Thinking Across the Disciplines, 23(1),* 39-43. http://dx.doi.org/10.5840/inquiryctnews2003/2004231/230.

Yin, R. (2008). *Case study research: Design and methods.* Thousand Oaks, CA: Sage Publications.

Yin, R. (2016). *Qualitative research from start to finish.* New York, NY: Guilford Press.

Appendix A

Interview Protocol for Student Teacher Participants

Date:

Location:

Interviewer:

Interviewee:

Interviewer will ask general guideline questions, but ask participants for clarification or to give further information, if necessary.

The purpose of this interview is to gather your honest perceptions surrounding your particular experience with written reflection journals during the student teaching placement. Please share your true, honest opinions, as this will help to inform the study.

Before the study begins (pre-study interview):

1. What is the process you go through for reflecting on lessons that you've taught? What steps do you normally take to complete a written reflection?

2. When you are asked to reflect on a teaching situation, what do you typically choose to reflect on? Why is this what you tend to focus on?

3. Have you been taught, in your teacher education program, how to critically reflect on your lessons? If so, what did this teaching look like?

At the conclusion of the study (post-study interview):

1. Can you please describe your student teaching placement? School? Grade?

2. What is the process you go through for reflecting on lessons that you've taught? What steps do you normally take to complete the written reflection?

3. When you are asked to reflect on a teaching situation, what do you typically choose to reflect on? Why is this what you tend to focus on?

4. Can you share an example of a situation that you felt was particularly helpful for you to reflect on? Did you feel as though you changed your instruction in any way as a result of this?

5. Do you feel as though the feedback/scaffolding/questioning on your written journal was helpful or not helpful to you? Why or why not? Did your reflection process change as a result of the feedback/scaffolding/questioning? If so, how?

6. Is there something else that you would have desired from the cooperating teacher, researcher, or university faculty that you think would have prepared you to reflect more deeply on your instruction?

7. Do you see reflection as a valuable professional skill that you will continue in your teaching career? Why or why not?

8. Do you feel as though the scaffolding had any change on the value you placed on reflection? Why or why not?

9. Is there anything else that you'd like to share about your experience with written reflection journals during student teaching or the questioning that you received?

Thank you for your truthful insight into the impacts of the written reflection journal on what you think of reflection and your experience as a student teacher. Your perceptions will help to inform future practice on the way that written reflection can be used with student teachers!

Appendix B

Interview Protocol for Cooperating Teacher Participants

Date:

Location:

Interviewer:

Interviewee:

Interviewer will ask general guideline questions, but ask participants for clarification or to give further information, if necessary.

The purpose of this interview is to gather your honest perceptions surrounding your particular experience with the reflection (both written and verbal) that the student teacher you supervised completed during student teaching. Please share your true, honest opinions, as this will help to inform the study.

1. Please tell me about your experience having student teachers. What are your expectations for a student teacher that is placed in your classroom? How long have you taught?

2. How do you reflect on your own teaching?

3. In the past, have you encouraged self-reflection in your student teachers? If so, how?

4. What do you think are the most common strengths for student teachers during their placement? Weaknesses?

5. How do you approach constructive criticism when providing feedback to student teachers on lessons they've conducted?

6. Please tell me what a typical "after" lesson conference between you and the student teacher looks like.

7. From your perspective, what does a "reflective" student teacher look like? What types of reflection does he/she produce?

8. What topics did your student teacher typically tend to reflect on? Do you think there's an explanation for this?

9. Did you notice the student teacher becoming more reflective throughout the placement, as they developed more experiences? What did they do that showed you this?

Thank you for your truthful insight into the impacts of the written reflection journal on what you think of reflection and your experience as a cooperating teacher.

Appendix C

Scaffolding Framework

Level:	**Reflection that Occurs:**	**Researcher Prompts:**
Describing	○ Describe an event that has occurred ○ Explore the meaning of the event. ○ Give details about the event (contextual).	○ Can you provide some more details surrounding this incident? Who was involved? What do you know about the student/s? ○ What happened right before or right after this event? ○ What was the learning/lesson goal? ○ What teaching methods did you use?
Informing	○ Explore ideas that inform/explain the event. ○ Formulate theories based on the classroom situation (What the teacher is actually doing in the classroom-- theory-in-use)	○ Why did you make the choice to handle this/teach this in the way you did? ○ What do you believe to be true about student learning or student behavior that may explain this situation?
Confronting	○ Question teacher's held theories, beliefs, practices and assumptions about teaching and learning ○ Position individual theory within a broader context (outside the classroom)	○ Do you view this classroom event as a success or not? Why/why not? ○ Does this make you think differently about what you previously believed about teaching and learning?
Reconstructing	○ Develop or confirm a theory about teaching and learning ○ Describe future actions for this situation or a similar situation	○ What could explain why this happened the way it did? ○ Would this work the same way if you put it in a different context (place, student, subject, etc.)?

*Based on Smyth's (1989) four levels of critical reflection

Appendix D

Instructions for Student Teachers to Complete Written Reflection Journals

1. Complete one entry for the written reflection journal weekly on the electronic document (on GoogleDocs) that has been shared with you. This will count as your requirement for student teaching for PSU. The written reflection journal will also be shared with your student teaching supervisor.

2. The document will look like this. Please fill in all sections.

Date of Entry: Subject and/or lesson being reflected on: Reflection:

3. In the reflection section, please describe the event, as well as share your reflective thoughts.

4. After you've completed each journal entry (starting with Journal Entry #3), the researcher will provide some questions and/or prompting via the comment feature in GoogleDocs to get you to think about the event more critically. You may choose to respond in writing (using the comment feature) or simply think about your response.

Notes:

- Please do not use real names of students in your classes for confidentiality reasons. Please simply say "a student" or instead respectfully describe the student.

- The researcher is interested in your honest reflections, and will maintain confidentiality with any reflection that is made in these journal entries. Pseudonyms will be used, so that no one reading the study will be able to identify any written reflection as yours.

Appendix E

Letter of Consent for Cooperating Teachers

(This will be printed on Indiana University of Pennsylvania letterhead.)

To: Prospective Cooperating Teachers for Student Teachers

RE: Doctoral Dissertation Study Request for Participation

From: Jana A. DelMarcelle, Project Director

You are invited to participate in a doctoral dissertation study in the fall semester of 2016. You were asked to participate in this study because the student teacher who is placed in your classroom has agreed to be a participant in the study. As you know, reflection on teaching is an important process to enhance learning during the student teaching semester. This study will examine the written reflection journals of student teachers. Whether you choose to participate or not, your participation or non-participation will not affect your relationship with the employees of Pennsylvania State University or the project director. If you choose to participate, all information will be held in strict confidence in a locked closet in the project director's office. There are no risks to you at any point in the study. If you choose to participate, you may withdraw from the study at any time by notifying the project director. Upon your request to withdraw, all information pertaining to you will be destroyed.

The study will be conducted during the student teaching fall block. During this time, the project director will interact with your student teacher regarding his/her reflection journal that he/she has shared. The project director will provided prompting and questions to support the student teacher in his/her reflections. At the end of the research study, you will be interviewed regarding the student teacher's reflective practices. The interview can be conducted by phone or at your place of employment and will last approximately twenty to thirty minutes.

If you are willing to participate in the study, please sign the statement below and mail it in the self-addressed, stamped, enclosed envelope. Please keep the additional unsigned copy for your records. If you choose not to participate, please return both unsigned copies to the Field Experience Office. Thank you for your consideration and/or participation in this study. If you have further questions, please do not hesitate to contact:

Project Director:
Jana A. DelMarcelle
Doctoral Candidate
322 Pamela Lane
Lebanon, PA 17042
Phone: 717.304.9298
hctt@iup.edu

Advisor:
Dr. Sue Rieg
Indiana Univ. of PA
122 Davis Hall
Indiana, PA 15705
srieg@iup.edu

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board on September 9, 2016.

VOLUNTARY CONSENT FORM:
I have read and understand the information on the form and I consent to be a subject in this study. I understand that my responses are completely confidential and that I have a right to withdraw at any time. I have received an unsigned copy of this form to keep in my possession.

Name (PLEASE PRINT): _____

Signature: _____

I certify that I have explained to the above individual the nature and purpose, the possible benefits, and possible risks associated with participating in this research study, have answered any questions that have been raised, and have witnessed the above signature.

_____

Project Director Signature Date

Appendix F

Letter of Consent for Student Teachers

(This will be printed on Indiana University of Pennsylvania letterhead.)

To: Pennsylvania State University (Harrisburg Campus) Student Teachers

RE: Doctoral Dissertation Study Request for Participation

From: Jana A. DelMarcelle, Project Director

You are invited to participate in a doctoral dissertation study while you complete your student teaching experience. The study will examine the reflective journal writings of a small number of student teachers. Your participation in this study is voluntary. Whether you choose to participate or not, your participation or non-participation in the study will not affect your grade in student teaching. Your participation or non-participation in the study will not affect your relationships with the faculty at Pennsylvania State University or the project director. If you choose to participate, all information will be held in strict confidence in a locked closet in the project director's home. If you choose to participate, you may withdraw at any time by notifying the project director. Upon your request to withdraw, all information pertaining to you for the study will be destroyed.

The participants in the study will keep a written reflection journal for their student teaching placement on Googledocs, so that is accessible to the project director. The participants will respond to the project director's questions or comments on a weekly reflection on the sheet. There are no additional written requirements outside of what is expected for your student teaching placement. At the end of the study, you will be asked to complete an approximately thirty minute phone or in-person interview with the project director.

Your responses in the data collected will only be considered in combination with other participants in the study. The information gathered from the study may be published in educational journals or presented at conferences, but your identity will be kept strictly confidential.

If you are willing to participate in the study, please sign the statement below and return it in the self-addressed, stamped envelope enclosed. Please keep the additional unsigned copy for your records. If you choose not to participate, please return the unsigned copy to the Field Experience Office. Thank you for your consideration of/participation in this study. If you have any questions, please do not hesitate to contact:

Project Director:
Jana A. DelMarcelle
Doctoral Candidate
322 Pamela Lane
Lebanon, PA 17042
Phone: 717.304.9298

Advisor:
Dr. Sue Rieg
Indiana Univ. of PA
122 Davis Hall
Indiana, PA 15705
srieg@iup.edu

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board on September 9, 2016.

Institutional Review Board Chair:

VOLUNTARY CONSENT FORM:
I have read and understand the information on the form and I consent to be a subject in this study. I understand that my responses are completely confidential and that I have the right to withdraw at any time. I have received an unsigned copy of this form to keep in my possession.

Name (PLEASE PRINT): _____

Signature: _____

I certify that I have explained to the above individual the nature and purpose, the potential benefits, and possible risks associated with participating in this research study, have answered any questions that have been raised, and have witnessed the above signature.

_____

Project Director's Signature Date

Appendix G

Related Research Studies Summary Table

In-Text Citation	Where Conducted?	Quantitative/Qualitative?	Sample/Population
Boden, Cook, Lasker-Scott, Moore, & Shelton, 2006	United States	informal qualitative	60 adult education graduate students
Buzdar & Ali, 2013	Pakistan	qualitative	450 Allama Iqbal Open University students
Chabon & Lee-Wilkerson, 2006	United States	qualitative- first step of a larger study	18 communication sciences and disorders graduate students
Christof, 2014	Bulgaria	qualitative	teacher education program at University of Innsbruck
Coffey, 2014	Australia	qualitative	cohort of graduate diploma of education students
Connell, 2014	theoretical article	theoretical article	theoretical article
Convery, 1998	theoretical Article	theoretical Article	theoretical Article
Dahl & Eriksen, 2015	University College in Norway	qualitative	28 students and 7 teachers in a bachelor nursing program
Dinkelman, 1997	United States	action research	N/A
Dyment & O'Connell, 2014	United States	qualitative	8 educators who no longer keep reflective journals
Farrell, 2015	Australia	qualitative	16 students in a government primary school
Fry, Klages, & Venneman, 2013	United States	quantitative	96 teacher candidates

Greiman & Covington, 2007	United States	mixed methods	3 consecutive cohorts of student teachers (44)
Harris et al., 2010	theoretical E-Book	theoretical E-book	theoretical E-book
Hooey & Bailey, 2005	United States	qualitative/action research	world geography class freshmen
Jarvis, Dickerson, Thomas, & Graham, 2014	Malaysia & United Kingdom	quantitative- 180 survey respondents	120 undergraduate students
Jones & Jones, 2013	United States	qualitative	1 methods of secondary education course
Khan, Fazal, & Amin, 2014	Pakistan & United Kingdom	comparison of 2 case studies	10 participants from each university
Mariko, 2011	United States	case study/action research	final year education students
Moore-Russo & Wilsey, 2014	United States	qualitative	2 groups of future teachers
Moussa-Inaty, 2015	United Arab Emirates	qualitative	interns in the college of education
Reinertson & Wells, 1993	United States	qualitative (informal)	4 semesters of college students
Ricks, 2011	United States	qualitative	prospective secondary mathematics teachers
Sharma et al., 2011	Honduras	qualitative	pre-service teachers in a study abroad program
Singh & Mabasa, 2015	South Africa	qualitative	survey of undergraduate education program
Stevenson & Cain, 2013	United States	qualitative	beginning student teachers in 3 high schools
Tok & Dolapcioglu, 2013	Turkey	mixed methods	328 primary school teachers
Walker, 2006	United States	theoretical article	athletic training students