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THE NEED FOR INTROSPECTIVE ANALYSIS DURING TEACHING

By

Kimberly A. Salter

THESIS

Submitted to

Northern Michigan University School

In partial fulfillment of the requirements

For the degree of

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March 2022

SIGNATURE APPROVAL FORM

THE NEED FOR INTROSPECTIVE ANALYSIS DURING TEACHING

This thesis by Kimberly Salter is recommended for approval by the student's Thesis Committee and Department Head in the School of Education, Leadership, and Public Service and by the Dean of Graduate Education and Research.

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March 2022

ABSTRACT

THE NEED FOR INTROSPECTIVE ANALYSIS DURING TEACHING

By

Kimberly A. Salter

This qualitative, phenomenological research study was designed to study the impact reflection has on student teachers. This study examines how *and if* reflection changes teaching practice. Specifically, *how do student teachers use reflection to change practices during student teaching experiences?* “Critical reflection is the process by which adults identify the assumptions governing their actions, locate the historical and cultural origins of the assumptions, question the meaning of assumptions, and develop alternative ways of acting” (Cranton, 1996, p. 211). After conducting thorough interviews, the following themes emerged:

1. Time
2. Perspective
3. Reflective Process

With the findings of this study, teacher education programs and schools alike will understand the dynamics of reflection, the difficulties that arise, and the need for creating sound reflective practices, which will support the continuing efforts of reflection in order to change teaching practice.

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This thesis follows the format prescribed by the Publication Manual of the American Psychological Association (APA), Seventh Edition.

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CHAPTER I: INTRODUCTION

Teacher reflection continues to be an essential part of educational literature and is fundamental to education because it allows us to rethink our practice, develop our skills, and review our effectiveness. In general, reflection has multiple meanings. Merriam Webster defines reflection as, *consideration of some subject matter, idea or purpose*, while Oxford defines reflection as, *careful thought about something, sometimes over a long period of time*. Without reflection, our learning becomes stagnant. Many reflection cycles exist within education, but what would happen if we taught the process, then used our learnings to incite change continuously? For example, one 3-step process is: (1) Describe what occurred, (2) Analyze the experience; *What were the implications of the lesson, test, etcetera* and (3) Take action; *How will the informational data be used to inform next steps and what is the action plan moving forward?* Breaking down the process will help student teachers and current teachers by understanding the steps needed, being able to reflect more mindfully and intentionally, thus hopefully producing change in practice. For example, if one reflects upon how students will be graded, technically one is reflecting with regard to classroom procedures, which does not necessarily equate to critical reflection where a change of practice will occur for the duration. Rather than think of reflection as informal, we must be intentional by progressing forward with our learning. As we reflect, what thoughts does it conjure? What emotions percolate to the surface? Then, what do we do with this data to invoke change? More recently, critical reflection has been recommended as a means of incorporating issues of equity and social justice into teaching thinking and practice (Howard, 2003). As Shankman states (2015),

Make reflection a habit. In addition to seeking feedback, we also have many opportunities to learn more about ourselves through reflection. These opportunities are

occasions for enhancing our self-understanding; however, we often miss these moments. We are too busy or we dwell on situations rather than seek to learn from them. (p. 24)

Reflection gives permission to push our thinking deeper by understanding the inherent need we have as humans to learn and invoke change. Reflective teaching involves examining one's underlying beliefs about teaching, learning and alignment with actual classroom practice before, during, and after a subject or course is taught. While reflection is needed, how do we reflect, utilize our learnings, and then make changes? More importantly, how does reflection change teaching practice?

Purpose of Study

The purpose of this study is to learn how reflection changes teaching practice, thus supporting teaching outcomes. "Critical reflection is the process by which adults identify the assumptions governing their actions, locate the historical and cultural origins of the assumptions, question the meaning of assumptions, and develop alternative ways of acting" (Cranton, 1996, p. 211). With the findings of this study, educators will understand current needs, be able to develop reflective practices and protocols to support ongoing instruction, which in turn, will support new and veteran teachers by fundamentally changing how we reflect, along with changing outcomes. Rather than being an informal task without structure, we will be able to create guidelines that will support teacher reflection and ongoing professional growth.

Research Question

How do student teachers use reflection to change practice during student teaching experiences?

Teachers are often asked to be reflective but what occurs during and after reflection? In order to decipher data, we must first learn vital answers to the following questions:

1. Does reflection change a specific teaching practice?
 - a. How do we know?
 - b. What procedural changes occur?
 - c. What is the evidence?
2. What is the science behind reflection?
3. How can reflection be tracked effectively in order to proactively change teaching practices?

Theoretical Framework

Several theories are noteworthy. In order to select an appropriate framework, additional research was conducted to fully understand the dynamics of each and to select the best framework for this study. The following theories are to offer a brief overview.

Theory of Reflection

The theory of reflection is a fundamental skill for learning, which first arose from the writings of John Dewey, who defined reflection as “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusive to which it tends” (Dewey, 1933, p. 6). Many believe Dewey to be the founder of reflection. His five-stage process of reflective thinking continues to be utilized to this day in various professions:

1. Identify and Define the Problem
2. Analyze the Problem
3. Establish Criteria for Solutions
4. Generate Possible Solutions
5. Select the Best Solution

The theory of reflection, coupled with the process, can ignite the intentionality, while creating meaningful reflections in the classroom.

Transformative Learning Theory

Mezirow's transformative learning is defined as “an orientation which holds the way learners interpret and reinterpret their sense experience, which is central to making meaning and

hence learning” (WGU, 2020, p.2). Simply, transformative learning is the idea that learners who are acquiring and absorbing new information are also evaluating their past ideas and understanding, by modifying their beliefs as they obtain new information through critical reflection. It goes beyond simply acquiring knowledge and dives headfirst into how learners find meaning in their lives. Mezirow found that critical reflection and critical review could lead to a transformation of their understanding. In order to teach for transformation, we need to recognize the various facets of the process. Mezirow (1991) sees transformative learning as a primary goal of all adult learning, which is at the core of this study. Transformative learning is not a linear process, yet there is some progression to it, perhaps spiral-like (Cranton, 2000), which is exactly the focus. Creating opportunities for student teachers to progress as they reflect and ultimately change their teaching practice is crucial.

Cognitive Theories

Cognition is the process of organizing and making meaning of experience. “Cognitive Learning Theory is largely based on the work of Jean Piaget, who rejected the idea that learners are passive and simply react to stimuli in the environment” (Padgett, 2020, p. 1). Padgett further states that instead of focusing on observable behavior, cognitive theory attempts to explain how the mind works during the actual learning process. Cognitive developmental theories further address the emerging nature of concept formation, reasoning, and problem solving. They examine the increasingly complex structures that support changing and thinking about *multidimensional* problems with possible outcomes. In these theories, knowing is not a constant state. Rather, knowing is an active process of achieving equilibrium through continuous interactions between the person and the environment.

Theory Selection

After careful review and studying the various theories above and others at length, this study will use the transformative learning theory, due to the nature of this research and the need for critical reflection. This study will ideally decipher how reflection changes teaching practice. By using transformative learning theory as the theoretical framework, it will showcase how student teachers transform their thinking via reflection and during their transformation how reflection changes their teaching practice. While transformative learning is not necessarily linear (Cranton, 2000), the end goal for this research is that it will foster change through continuing transformation.

CHAPTER II: LITERATURE REVIEW

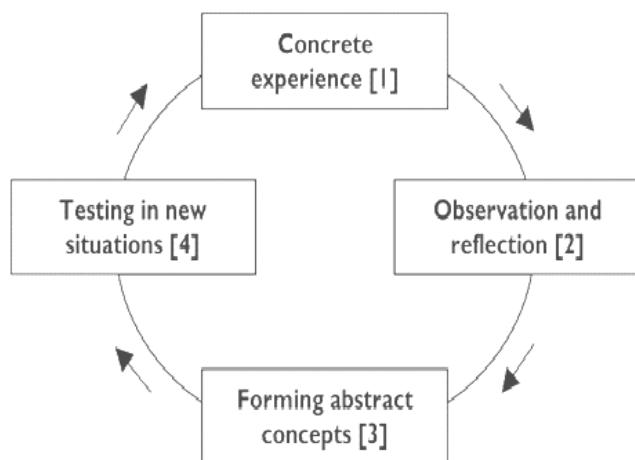
In educational literature, reflection has been cited multiple times as a means to self-regulate our ability to change practice in order to change our outcomes. “The roots of reflective teaching are historically evident in the works of John Dewey (1933, 1938), who maintained that reflection is an important aspect of learning from experience” (Shandomo, 2010, p. 103). Two other key learning theorists David Kolb and Donald Schön also believed that reflection is a fundamental component in learning and development. The purpose of this literature review is to briefly learn about the three leading theoretical perspectives, examine the existing research regarding reflection and whether in fact reflection produces change in practice, along with noting potential challenges.

John Dewey

John Dewey (1859 – 1952) was a strong proponent for educational reform. His belief was students learn best when they learn by doing. With regard to personal learning, he is thought to be the founder of reflection. Dewey believed that reflection was not merely passive, but rather deliberate and an active process. It is actively thinking about learning. In Dewey’s words it is an “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and further conclusions to which it leads” (Dewey, 1933, p. 118). His research in *Experiential* and *Inquiry Based Learning* was extensive and particularly helpful in delving deeper into the relationship amongst experience, reflection, and learning. Utilizing John Dewey’s principles during student teaching will support the need for ongoing reflection, which may invoke change in teaching practice. The following figure showcases a sliver of John Dewey’s complex research. Figure 1 is Dewey’s conceptual model

for learning by doing, also known as experiential learning. First, an experience occurs by which one can observe and reflect upon in the present. For example, when students are actively engaged in a lesson activity, they are *learning by doing*. Thereafter, opportunities for discussion and interaction will support learning and can then be connected and applied to other subjects and situations based upon the new learning. Likewise, student teachers can gather information daily based upon individual learning, thereafter reflecting, and creating change in teaching practice.

Figure 1: John Dewey's Learning by Doing



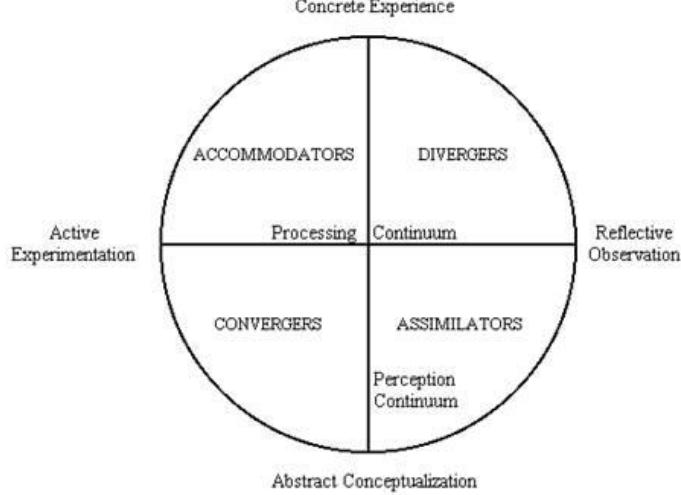
Note: John Dewey's conceptual Learning by Doing model. Reprinted from *Teaching of operational excellence in Moroccan universities and high schools*, by Elouarat et al., (2011).

David Kolb

David Kolb (1939 -), elaborated upon the process that Dewey constructed. He created Kolb's *Theory of Experiential Learning*, which defined the four stages of learning from experience. Specifically, concrete experience, reflective observation, abstract conceptualization, and active experimentation. For Kolb, learning is a cycle that enables and fosters additional learning. "Learning is the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38). Without the learning cycle, one becomes trapped in the experience, rather than having the ability to gain newfound understanding. His work created a presentation of the reflective approach (Kolb, 1984). Utilizing David Kolb's theory during

student teaching, enables teachers to continually learn, while reflecting. This act will engage student teachers in a learning cycle that will ideally become habitual over the course of their career. Figure 2 showcases Kolb's experiential learning cycle. Kolb's experience-based learning model is built upon the idea that learning preferences can be described along two continuums: active experimentation vs. reflective observation and abstract conceptualization vs. concrete experience (Kolb, 1997). "According to Kolb, learners perceive and process information in a continuum from concrete experience, reflective observation, abstract conceptualization, and active experimentation" (Concrete/Reflective/Abstract/Active, (n.d.).
web.cortland.edu/andersmd/learning/kolb.htm).

Figure 2: Kolb's Learning Cycle



Kolb's Learning Styles

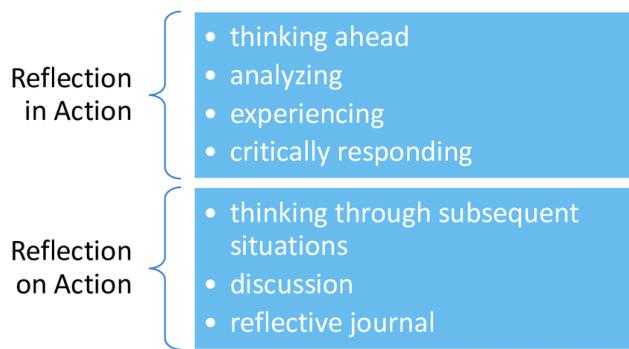
Note: Kolb's Learning Cycle. *Concrete/Reflective/Abstract/Active-David Kolb, (n.d.)*. Reprinted from web.cortland.edu/andersmd/learning/kolb.htm

Donald Schön

Donald Schön (1930 – 1997) was interested in how and when professionals use reflection to build upon their prior knowledge. In addition, he was one of the early contributors to cognitive design theory. His initial work in 1983 was geared toward educators and guided

educators to use journal writing as a forum for reflection. He believed that while reflective practice may be used in textbooks, it does not equate to being used in daily practice. Schön (1991) stated, “Reflective practice is a type of practice through which an individual comes to know about the implicit knowledge and learning based on their experiences” (p. 18). Further, he described two processes that contribute to the development of expertise: *reflection-in-action* and *reflection-on-action*. While engaged in an experience it is known as *reflection-in-action*, whereas after an experience, *reflection-on-action*, allows educators to develop practices that will support decision making (Schön, 1991). Figure 3 showcases Schön’s model. Utilizing Donald Schön’s research during student teaching, will allow both types of reflection to occur, during and after lessons. His research may support teacher actions, both during and after, and potentially change teaching practice.

Figure 3: Schon's Reflection-in-action and Reflection-on-action



Note: Donald Schön’s Reflection-in-action and Reflection-on-action from The good, the bad, and the ugly. A model for reflective teaching practices in coaching pedagogy, by Gordan, E. (2016). *Strategies*. 30.10.1080/08924562.2016.1251866

Reflective Thinking

Being reflective and reflective thinking are fundamentally different. While one can reflect upon a day in their mind, critical reflection involves reflective thinking.

Reflective thinking is a multifaceted process. It is an analysis of classroom events and circumstances. By virtue of its complexity, the task of teaching requires constant and continual classroom observation evaluation, and subsequent action. To be an effective

teacher, it is not enough to be able to recognize what happens in the classroom. Rather, it is imperative to understand the “why’s”, “how’s,” and “what if’s” as well. This understanding comes through the consistent practice of reflective thinking. (McKnight, 2002, p. 1)

Ultimately, reflection occurs in a cycle of action, reflection, and action. Dewey, Kolb, and Schön included reflection in at least one step in their theories. For all three, reflection is not separate from an experience, rather it is a part of the cycle of learning and experiencing. Dewey described aspects of reflection, while Kolb described phases and Schön divided reflection into two parts. All included experience as a measurement of reflection, in order to apply learnings towards further experience.

Reflection Studies

There are several studies that connect the power of reflection to teaching practice. However, only a very few provide reflection findings that change a specific practice. For example, Tillema (2000) had 36 student teachers from two teacher training colleges in the Netherlands participate in a self-directed learning study. One group contained 23 student teachers named the *reflection immersion* group (R – I), while the other group had 13 and was named the *immersion reflection* group (I – R). The seminar encouraged student teachers to use self-regulated learning and thinking and treated reflective learning as the medium for practicing self-directed methods. Further, the seminar was divided into three parts: a three-month reflection period that allowed student teachers to become familiar with self-directed learning, a three-month immersion period, during which student teachers were supervised while teaching, and a three-month follow up period of practice teaching being further observed and interviewed. The data implied that student teacher’s beliefs differ. The *reflection immersion* group (R – I) produced an increase in the level of reflection. The change most noted was student teachers previously held beliefs, prior to seminar. By reflecting first, they were able to work within teams

to discuss their thinking and findings, which also led to a more positive experience, whereas the *immersion reflection* group (I – R), had less favorable reflection results (Tillema, 2000). Could this be due to the fact that being immersed in teaching first, without having an opportunity to reflect, jaded their beliefs?

Whereas Schön distinguishes between *reflection-in-action* and *reflection-on-action* as previously discussed, he further states “some of the most interesting examples of *reflection-in-action* occur in the midst of a performance and can be described by phrases like thinking on our feet, suggesting that we can think about something while doing it” (Schön, 1983, p. 54). Likewise, van Manen (1991) defines *reflection-in-action* as an active or interactive reflection, which “allows us to come to terms with the situation or problem with which we are immediately confronted. This *stop and think* type of reflection permits us to make decisions on the spur of the moment” (p. 512). This makes one wonder, since *reflection-in-action* happens in real time, which potentially reduces the chance of forgetting what actually occurred, how will it foster change in teaching practice?

Since this study will learn about participants’ reflection habits and how reflection supports changes in teaching practice, the focus is *reflection-on-action*, which gives teachers an opportunity to reflect upon particular events, strengths, weaknesses, and whether they used appropriate teaching strategies and methods. In this scenario, new learning may still occur and teachers may gain personal knowledge about their overall experience (Çimer & et al., 2013).

Anna Freese (2006), using self-study methodology, conducted a study with Ryan, who began as a pre-service teacher and followed his growth and development over a 2-year period. His honest reflections are what originally created the study, which closely examined the process of learning to teach and how reflection plays a starring role. After all, developing reflective

teachers has led to research that not only focuses on the teacher as a researcher, but as an inquirer into his own practice (Freese, 2006). Further, Cochran-Smith (1991) argues it is important for students who are becoming teachers to participate in reflective conversations with others about the process of teaching and learning. The honesty that occurred between the student and Dr. Freese validated the interpretations of others may be inaccurate. Instead, we must find ways to increase student awareness about themselves and inquire into their teaching. The challenge is to ensure we nurture, so that resistance or defensiveness does not creep into the process of reflection. This begs the question, how are supervisors and school site mentors assigned to student teachers? Obviously, this is critical in order for student teachers to evolve and become their best version. It also makes one wonder, what are the guidelines of becoming a supervisor or mentor? Does each university and school select their own criteria? Would it be beneficial for a standard to exist? Rather than years of service that many schools use by default, perhaps a better question might be what emotive qualities does the supervisor or mentee possess?

Interestingly, attitude and the will to be open-minded played a role in Ryan's growth. In the beginning, he was closed, not willing to delve deeper into his experiences to make changes. As time progressed, dialogue journals, videos, and reflections were all used to facilitate continued dialogue between Ryan and Dr. Freese. After the study, the following themes emerged: "fear, responsibility, contradictions between his beliefs and practices, and closed-mindedness" (Freese, 1006, p. 110). Fear set in and Ryan became a prisoner of his own thoughts. He exhibited a "fear of failure" and spoke of his "fear of idiocy" (Freese, 2006, p. 111). In addition, Ryan was unable to be accepting of his personal problems. His personal responsibility was nil. Not to mention, another factor was the contradiction between his beliefs and his teaching practice. Wiggins and Clift (1995), discuss how "contractions occur when student teachers

verbalize certain beliefs but they do not apply the beliefs in their own classroom” (p. 10).

Finally, close mindedness reared its ugly head. Ryan was honest by sharing that he relied on what he was taught and was not open to taking risks. This is also an eye-opening result. Teaching in general is specific, especially with Common Core State Standards, but there is autonomy in how a lesson can be taught based on the nature of those enrolled and their current knowledge. Why are teachers not feeling equipped to take risks? Is this due to site expectations or an internal belief?

Ultimately, time was the catalyst for change, as well as strengthening Ryan’s confidence. He was able to integrate strategies from other teachers that were in line with his beliefs and found a balance in his teaching (Freese, 2006). At the end of the study, Ryan was able to critically reflect upon his prior educational experiences, which proved to be a significant factor in his personal and professional growth. He was able to reframe and reconstruct his experiences in order to see things differently. As educators, we must keep in mind that Ryan’s ability to morph took time; it occurred due to his 2-year commitment to self-study.

Reflection Complications

One complication with reflection is the lack of sophistication a student teacher may have as a learner. “When confronted with the task of reflection, student teachers often feel unable to reconcile their own beliefs with what is experienced during their practice teaching” (Sugrue, 1997; Edwards & Collison, 1996; LaBoskey, 1997, p. 226). Often student teachers will feel trapped and believe that their own beliefs are not appropriate or they may not be able to cope with reality, which in turn, could create unfavorable effects upon building their own reflective system (Sugrue, 1997). Knowing this information helps this study because of an awareness

brought to the forefront. Since belief patterns are often found in the student teacher's own past perspectives as a learner, this will be reflected in the final session questions.

Another possible complication is the reflective process. When are student teachers taught the reflective process or types of reflective questions to ask while reflecting? For example, Ryan and Cooper (2006) suggest the following six reflective questions:

1. What am I doing and why?
2. How can I better meet my students' needs?
3. What options are available?
4. How can I encourage more involvement or learning on the part of the students?
5. Have I considered my own values as a professional and my comfort level in acting on those values?
6. What conscious choice can I make to make a difference?

However, what is seemingly missing is the action step. How does one move from the reflection process to specific and measurable outcomes? While research exists supporting various styles of reflective questions, student teachers must be made aware of not only the *how* but the *why*. Not to mention, in order to answer reflective questions effectively and promote change, one must have opportunities to do so, which brings another potential complication. Time.

Ironically, first year university students struggle due to a lack of time management. Van der Meer (2010) states, "One of the central issues is whether universities acknowledge a role in helping students to get used to learning and teaching environments that are different from those at high schools" (p. 778). This continues into the realm of student teaching. How much time do student teachers receive and devote for purposeful and meaningful reflection, including planning? Research supports that time is critical for school reform. One study found "that most teachers receive approximately 45 minutes of planning time per day in their contract hours, with a range from 12 to 80 minutes for elementary teachers and 30 to 96 minutes for secondary

teachers” (NCTQ, 2012). With this time allotment, are teachers truly apt to plan effectively based upon individual student and classroom needs? Schools must devote specified time for intentional planning including teaching *how*, to allow for reflection and planning to occur with colleagues, as well as individually. Planning has a direct effect on the quality of teaching because it allows teachers to prepare. For example, without proper planning one may not have time to:

- Review the lesson prior to and know what items are needed
- Locate manipulatives that would support concrete learning
- Reflect upon a lesson and make necessary changes for instruction

These missed opportunities over time, will not only affect student learning but also create a habit of not integrating reflection. “After teaching a full day, grading assignments, providing feedback to students and families, meeting with colleagues and then preparing for the next day, it can be challenging to find time or head space for reflection” (Kamal, 2020, para.1).

Additionally, lesson planning confines, coupled with time can be a difficult task for student teachers to navigate. “The use of the dominant linear model, which begins with the specifications of objectives and ends with a lesson evaluation” is outdated (John, 2006, p. 483). While numerous attempts have been made to reform education, John (2006) suggests “an increasing emphasis on the importance of competence on the part of student teachers in the skills of curriculum design and lesson planning” (p. 484) are needed. Several lesson plan templates exist, while many textbooks and curricula offer premade lesson plans that many teachers use, due to lack of time spent planning individually. Why, then, is the dominant linear model so popular? It is structured and allows one to follow based upon content taught. John (2006) further suggests, “Student teachers need to know how to plan in a rational way before they develop more complex lesson structures and become adept at juggling curricular elements” (2006, p. 487). This is an important concept for student teachers to gain and practice, however there are other lesson plan

models that can be considered, such as the organic model or the interactional method, which may not necessarily be shared nor taught in higher education programs. Organic involves, “starting with activities and the ideas that flow from them before assigning objectives”, while the interactional method “allows the learning to be embedded in the processes of interaction” (John, 2006, p. 488). Giving teachers choice will expand upon their creativity and further allow each to select which makes the most sense. Similar to math, there are various ways to learn multiplication, yet not all use the same method.

As teachers begin their career, they need to learn how to prioritize, manage, and devote time for reflection. Since reflection directly supports planning, schools must develop schedules that allow for uninterrupted preparation. However, too often, teachers are pulled away from their planning time to cover classes or attend administrative student meetings. This time must be non-negotiable allowing student teachers, and current teachers, to plan accordingly. In order to do so, creative thinking may be in order. Merritt states, “Some districts have added more planning time for teachers in response to the demands of unions and teacher leaders. Late arrival and early release times can provide teachers with common planning time for PLC (professional learning community) work” (2016, p. 34). There are schools within Michigan that have adopted this model and philosophy. For example, the Mason Public School district, located in Mason, Michigan follows a late start Wednesday schedule. This provides teachers time to meet in PLCs for an hour before students arrive. “Parents have the option of registering for free before-school care on Wednesday mornings where students can participate in computer activities, independent reading, math games, and homework help led by paraprofessionals who work at the schools” (Merritt, 2016, p. 34). For schools that already include this critical time, direct coaching and

support are needed to ensure that all teachers understand the gravity of time management, coupled with planning and reflection.

Conclusion

The research regarding reflection in teaching; specific to changing teaching practices are few. While this literature review provides evidence of the three leading researchers, the power of reflection, along with possible challenges it is with great enthusiasm this study will showcase not only the power of reflection but how reflection can invoke change in teaching practice. The purpose of this research is to enhance the existing literature, support new and veteran teachers with understanding the dynamics of reflection, develop vital reflective processes, which includes the variable of time in order to support students and schools, thus inducing long-term changes.

CHAPTER III: METHODOLOGICAL DESIGN

The methodology selected for this study is qualitative, descriptive phenomenology, which refers to the study of personal experience. This requires a description or interpretation of the meanings of phenomena experienced by participants. The term phenomenology comes from the Greek ‘phainein’, which means ‘to appear’. Phenomenology was first used by Immanuel Kant in 1764 and is the study of experiences ranging from perception, thought, memory, imagination, and emotion, which has evolved into a process that seeks reality in individuals’ narratives of their lived experiences of the phenomena (Cilesiz, 2009; Husserl, 1970; Moustakas, 1994). The aim of phenomenological study is to understand and describe a specific phenomenon in depth. Hegel described the phenomenological approach as conscious knowledge associated with saying what is perceived, sensed, and known from the person’s experience (Moustakas, 1994). Max van Manen (1990) stated,

The essence of a phenomenon is a universal which can be described through a study of the structure that governs the instances or particular manifestation of the essence of that phenomenon...A universal or essence may only be intuited or grasped through a study of the particulars or instances as they are encountered in lived experiences (p. 10).

Therefore, the reasoning for using a descriptive phenomenological approach is to understand and describe a specific phenomenon in depth, which in this case is reflection, and “reach the essence of participants lived experience of the phenomenon” (Arslan & Yildirim, 2015, p. 3).

Reflection is an aspect of teaching. While we are aware of the term, what does reflection entail and how often does reflection occur? The research in this study will guide and explain how *and if* reflection changes teaching practices. Since phenomenological research studies the lived experiences of participants, purposive sampling will be used. Padilla-Díaz (2015) states, “Purposive sampling is characterized by the incorporation of specific criteria met by the

participants at the moment of selection” (p. 104). Further, Polit and Beck define purposive sampling as a “selection of participants based on the researchers’ judgement about what potential participants will be most informative” (p. 226). The purpose of sampling is to learn information from those sampled and apply the information to conduct further research when applicable. In this study, the sampling will be student teachers.

Participants

For this research, Northern Michigan University student teacher candidates enrolled in the Fall 2021 program, were asked to participate in this study. The researcher is a Northern Michigan University field supervisor. The five student teachers assigned to the researcher were asked to participate. If students chose not to participate it did not affect their standing, nor was it included in this research. While Creswell (1998) recommends it is typical to study 3-15 participants, Morse (1994) suggests at least six. However, with a caseload of five student teachers the outcome was dependent on whom chose to participate.

Procedure

To identify participants, an email was sent to the five student teachers being supervised in Fall 2021, which met Creswell’s criteria. Further, five had to suffice, since the researcher was assigned five student teachers. If five did not choose to participate, then a minimum of three was acceptable as per Creswell (1998).

Once the researcher received approval from the International Review Board (See Appendix C), five participants were invited to participate in the study via email. In order to ensure ethical research, informed consent was used (See Appendix A). This allowed for participants to understand why they were participating in this study along with the purpose, procedures, and voluntary nature of research participation, which includes confidentiality.

Three student teachers chose to participate, two males and one female. Each were assigned to different school sites within Michigan and all were placed in grades 6-12. Once each signed the informed consent form, the researcher scheduled the final Zoom session, which was conducted at the end of each student teacher's teaching placement. All data, including Zoom recordings and transcriptions were stored on the researcher's password protected personal computer. In addition, the researcher used pseudonyms in order to protect participants identity and shared essential background information that can be found in chapter four.

Throughout the semester, student teachers were asked by the researcher to be reflective in their practice. Candidates were observed four times and ongoing dialogue occurred between candidates and the researcher via Zoom. During the individual conversations with student teachers, the researcher was able to weave reflection conversations throughout the semester. The final session consisted of six questions and was recorded via Zoom. The process was unstructured in the sense that participants had an opportunity to speak candidly. According to Creswell and Creswell (2018), the total number of questions should be between 5-10. During the final session, phrases such as *tell me more*, *you mentioned* and others were used to give participants an opportunity to delve deeper and not allow the thinking of the researcher to skew their thought process.

Data Collection

Due to the use of phenomenological methodology, the data collection consisted of three in-depth individual final sessions via Zoom. The researcher, as the field supervisor, was also able to document numerous conversations throughout the semester. Since each candidate was observed four times, conversations regarding reflection were interwoven during debrief sessions. The final session included six open ended questions and was recorded (See Appendix B).

During each session, which lasted approximately sixty minutes, copious notes were taken, examined, and listening skills were paramount. “The most appropriate data collection strategy for phenomenological research is the profound interview” (Padilla-Díaz, 2015, p.104).

Textual and structural analysis occurred, as well as *horizontalization* of data. The first step recommended by Moustakas (1994) in the phenomenological process is the *horizontalization* of data. Moustakas recommends that in order to carry out this step, “the researcher needs to be receptive to every statement of the participants experience, granting each comment equal value” (Moustakas, 1994, p. 122).

Data Analysis

Data analysis in phenomenology is characterized by finding common meaning and themes, *horizontalization* of data, textual and structure analysis (Moustakas, 1994, p. 122). Textual analysis refers to *what* is expressed by the participants, while structural analysis refers to the interpretations of *how* it is conveyed by the participants. Moustakas further recommends the researcher ask the following two questions while reading statements: “1) Does it contain a moment of the experience that is a necessary and sufficient constituent for understanding it?” and 2) “Is it possible to abstract and label it?” (Moustakas, 1994, p. 121). During *horizontalization*, all repetitive statements were removed, as well as any statement that did not directly relate to the specific research questions.

Next, findings were summarized and when applicable direct quotes were used. In order to ensure accuracy, the final Zoom session was recorded to the Zoom cloud and then saved. In addition, audio transcription was selected and utilized. This permitted the viewing of the recording, along with being able to read the actual statements made by each teacher, thus

allowing further analyzation. Thereafter, thematic coding was used in order to decipher the findings. “The identification of themes provides the complexity of a story and adds depth to the insight about understanding individual experiences” (Creswell, 2015, p. 511). Then, the data was reviewed once more and sorted, while key themes were identified by using thematic coding to identify any commonalities amongst participant responses. On average, five to seven themes emerge in qualitative research studies (Creswell, 2012). However, it needs be taken into consideration that three participants were involved in this study, with three themes emerging and one sub theme.

Within the discussion section, interpretations related to the findings, as well as concerns, issues, and implications have been addressed. “Phenomenological analysis requires describing and analyzing the text to interpret the context” (Padilla-Díaz, 2015, p. 105). Further, Creswell (2013) suggests the following six steps during phenomenological analysis, which were utilized during the study:

1. The researcher describes his or her own experience with the object of study in order to identify personal judgments and prejudices so they don't affect the process of analysis.
2. The researcher proceeds with the horizontalization of data. This refers to the process where the researcher lists each of the relevant quotes of the studied topic and gives them equal value with regard to the expressions of the group. This is where the textual description begins: What are the participants saying? What are the relevant topics expressed by the research participants?
3. The researcher groups the relevant topics into units of meaning.
4. The researcher writes the textual description and includes “ad verbatim” quotations.
5. The researcher writes the structural description.
6. Finally, according to the textual and structural analysis, the researcher proceeds to identify the essence of the phenomenon. What are the common elements repeated in each of the researched participants?

Results from this study will be used to inform universities and K-12 schools of reflective teaching practices, processes, and the need for continuing support. Specifically, supporting teacher education programs with guiding reflection, along with understanding the specifics and recommendations needed in order for reflection to change teaching practice. Further, recommendations and suggestions for future research are also provided.

CHAPTER IV: RESULTS

This qualitative, phenomenological study sought to reveal how student teachers use reflection in order to change practice. In the Fall of 2021, the researcher was the field supervisor for five student teachers enrolled in Northern Michigan University's teacher education program. Three chose to participate in this study. The researcher used pseudonyms for anonymity. Two participants were male, one female. All were placed in grades 6-12 classrooms at different schools, which garnered thought-provoking data.

Hadley completed her student teaching at ABC Private K-12 School, which has a total enrollment of 360 students. Her placement was social studies, grade 8 and also taught writing grades 9 and 10. She had one daily prep consisting of 50 minutes. The student to teacher ratio is 15:1. ABC School has a large campus, which includes a gym, library, multiple labs, and a football field. Along with athletics, students are able to participate in numerous extra-curricular activities throughout the school year. The minority enrollment is 4%.

Ryan, on the other hand, was placed at DEF 6-12 Charter School, which has an enrollment of 145. There, students participate in project-based learning. His placement was social studies, grade 7. Ryan had one daily prep consisting of 75 minutes, due to block scheduling. DEF Charter School has a student to teacher ratio of 18:1 and also incorporates STEM into the majority of lessons. Units are designed using Michigan state standards and teachers have an open-door policy in which they support each other by designing lessons that will merge into the other content areas. DEF 6-12 Charter School placed in the top 50% of all schools in Michigan for overall test scores, with math proficiency in the bottom 50%, and reading proficiency in the top 30%. The minority enrollment is 8%.

Participant three, Austin, was placed at GHI Middle School, which is a traditional public school, within GHI K-12 School District. He had a split placement and taught 7th Grade History as well as 7th and 8th Physical Education. The district, which includes several schools, has an enrollment of 3,100 students, while GHI Middle School has an enrollment of 730. The student to teacher ratio is 20:1. Sports and extracurricular activities are plentiful. The district's average testing ranking is 9/10, which is in the top 20% of public schools in Michigan. The minority enrollment is 12%.

The researcher interviewed participants separately for their final interview via Zoom, which was recorded, analyzed, and transcribed using thematic coding and phenomenal analysis. Once coding occurred, the statements were reviewed and went through a process of “horizontalization” (Creswell, 2009), which means every statement was treated with equal value and statements that were repeated were removed from the final list. Three major themes emerged:

1. Time
2. Perspective
3. Reflective Process

Time

Based upon participant interviews, 100% said time was their number one obstacle for reflection. While time is constant, it is a variable that every person can relate to during their life span. No matter the amount of additional time needed, twenty-four hours per day remains. Therefore, time needs to be effectively managed in order for change to occur. For example, one participant said, “Honestly, time is my number one concern. I simply do not have time to reflect upon my lessons and make needed changes” (Hadley, Zoom interview, December 9, 2021).

Therefore, how can time be allotted and then infused in day-to-day teaching allowing for explicit reflection, rather than becoming an afterthought?

Consider John Dewey's famous quote, *We don't learn from experience. We learn from reflecting on experience.* Educators constantly learn. However, if we do not reflect, do we make the appropriate changes needed for long term success? Between staff meetings, PLCs, lesson planning, lesson revision, parent teacher conferences, and the daily unknowns it is understandable why educators struggle with active reflection. While there is research giving sound strategies and resources, the outcome will remain the same unless time is purposefully scheduled for reflection.

Within time, a sub theme was found. Time, coupled with mental stamina, was noted by two of three participants. During the interview process, Ryan said,

You know I think my biggest obstacle is time and my brain. A lot of the time, I just want to be done and felt like I really valued my free time. For me, intentionally reflecting is definitely not one of my top five most pressing things. When I was really against the wall, I was not going take time to reflect. For example, on Thursday, I completely forgot what we did on Monday, so with time and energy I am not sure how to combat that. (Zoom interview, December 9, 2021)

Besides time, this data point connects student teacher mindset, personality traits, and individual needs. If mental fatigue is high, reflection may very well not occur. Mental toughness is one avenue that can support student teachers. For example, how are student teachers coping with stress and continual change? Stressors in schools vary, however student teachers will need to address these concerns with their cooperating teachers and field supervisors to navigate. Student teachers will need time to regroup in order to make changes to their pedagogy. Ultimately, time coupled with mental fatigue is a barrier for growth and using to change practice.

Perspective

Another theme that stood out was perspective. Student teachers must have an awareness of student actions. Often, what a student teacher notices during lessons are different than what students notice. For deeper insight, gaining the perspective of others, including students and colleagues will help support teacher reflection. Hadley said,

I think the bad experiences are the things that did not work out and were the ones I reflected upon most. Obviously, when something goes really well you are pumped about it and you want to continue that sort of spark in the classroom, so you try and replicate it in a lot of ways but it is not always replicable. (Zoom interview, December 9, 2021)

This data point gives credence to the need of being aware of student reactions, body language, and facial expressions. Austin shared when he received blank stares it made him feel uncomfortable. However, he kept going because he was unsure of what to do in the moment. Ryan shared the same sentiment. Whereas, Hadley shared during her lesson it was evident her students were “dazed and confused”. This noticing led her to say, “This is horrible. Let’s stop. We will throw this out and start fresh tomorrow.” The way in which one perceives a lesson as *good vs. bad* may not necessarily hold true. While Austin further noted,

I look at the high points and low points of the lesson and if it can be improved upon. But sometimes I do not know if it went well or not. Sometimes it may have gone better than I actually thought, which is confusing. (Zoom interview, December 8, 2021)

Schön (1987) suggests that the reflective teacher brings practice both tacit and strategic knowledge to the forefront. As discussed earlier, it is referred to as *knowing-in-action*, which ultimately leads to spontaneous action not connected to providing an explicit rationale. Whereas, *reflection-in-action*, occurs in the moment, produces change at that specific time, and not

necessarily long term but does shape professional behavior. If this holds true, then when one continues to conduct a lesson based upon their belief that it is working, this may be detrimental in the long term because needed change may not happen.

Reflective Process

After considerable reflection, the third theme that emerged is the reflective process, which needs to be deliberately and explicitly taught. “I think there is definitely some kind of before, during, and after process with reflection. I know the typical term of reflection is to look back and that seems to work” (Hadley, Zoom interview, December 9, 2021). This statement gave me pause. While we know the literal meaning of reflection, what about the process? While some shared, they utilize Google docs to jot thoughts, they are not used on a consistent basis. Throughout the thematic coding process, it was apparent that reflective practice to promote change was not at the forefront of daily teaching. For example, “I do not have any repeat classes, so I do not have the time to redo and try it again” (Hadley, Zoom interview, December 9, 2021). Another example,

There is so much that is expected of me daily, when would I be able to reflect and then what would I do once I have reflected, especially since most of my lessons are due the week prior? I mean, I do reflect but there is no direct connection most of the time. (Austin, Zoom interview, December 8, 2021)

This data provided valuable information in needing to teach the process and the practice simultaneously. The reflective process is one that must be intentionally taught in order to create effective reflective practitioners.

Conclusion

In conclusion, three specific themes emerged during the coding process: Time, Perspective, and Reflective Process. According to participants, they appreciated the opportunity to answer the six interview questions and reflect upon reflecting. Interestingly, Austin shared he changed his teaching practice after reflection with regard to his transitions. “After we talked through my second observation, I made a decision to make my transitions smoother and quicker but had I not had time to discuss and reflect with you, it may not have happened.” The implications of teaching reflection are tenfold. Ideally, reflective teachers are more apt to develop into reflective learners. Therefore, teaching student teachers how to efficiently reflect, will effectively improve their skills, and support their success while learning about student strengths, needs, as well as their own.

These findings are intended to support teacher education programs, including Northern Michigan University’s higher education, student teaching placement and beyond. The need for innately understanding the reflective process and being intentional practitioners is vital.

CHAPTER V: DISCUSSION AND RECOMMENDATIONS

Overview of Study

This phenomenological study was to examine how reflection changes teaching practice. Specifically, *how do student teachers use reflection to change practices during student teaching experiences?* However, during the analysis and coding, it was evident that a broader takeaway is *if* reflection changes teaching practice. “Critical reflection is the process by which adults identify the assumptions governing their actions, locate the historical and cultural origins of the assumptions, question the meaning of assumptions, and develop alternative ways of acting” (Cranton, 1996, p. 211). After conducting three thorough interviews, the following themes emerged:

1. Time
2. Perspective
3. Reflective Process

The end goal of this research was to learn how reflection changes teaching practice but instead it helped understand the dynamics of reflection, the difficulties that arise, and how creating sound reflective practices will support the continuing efforts of reflection in order to change teaching practice.

Discussion Recommendations

Reflection has been an ongoing expectation for educators, no matter how many years in the field. On its own, the term reflection is up for interpretation. For some, it simply means thinking about something, for others, it conjures a deeper thought process that makes changes to current behaviors and promotes action (Loughran, 2002). Within education, reflective practice is

a cognitive process in which one processes and monitors their thinking, so that teaching practices are continually improved.

Time

Although the term reflection is often used in teaching, the likelihood it will change practice is minimal unless changes are made. Needing more time is the overarching need, yet time is also constant. Therefore, how do we bridge time with ongoing reflection? Teachers must be emboldened with opportunities for reflection in order to support their own practice. With time being a major need, a shift in thinking must occur with reflectional practice and connecting these opportunities with a sound process.

The research from this study concludes that student teachers struggle with time and the rationale for ongoing reflective practice. What if a course was designed that would allow not only student teachers but all teachers to build upon their reflective process within educational programs? In Australia, student teachers have a four-year teacher education course that combines university studies with practical experiences in schools (Coffey, 2014). Coffey further states, “Throughout the four years students will be encouraged to develop their reflective skills through consistently asking themselves questions about their performance and how they might improve” (p. 88). Those with a current degree can enroll in a one-year certification program that comprises of classes in curriculum, classroom management and methodology, as well as classroom experience.

Building time into an educator’s schedule may be another component that for many is lacking. While some do in fact reflect, it is not so much about the skill as it is about the process and aftermath. How does reflection change teaching practice? This is the end goal. If reflection is not changing practice, then one must look into why not? While time is a definite factor, so is

understanding the process. Reflection is much deeper than a quick review of what occurred. In education, it is a method for understanding the fundamental dynamics of what worked well, revisions and changes that need to be made, and then actively making those changes. In other words, if reflection is merely superficial, the outcome will remain the same.

Video to develop reflection skills

In addition to time, educator's reflection skills can be honed. Rich and Hannafin (2009) suggest that while video has been widely used for reflective practice in teaching, newer video annotation tools may help transform teacher reflection. Not only do video annotation tools allow one to document, but it also provides evidence, and gives participants an opportunity to analyze their own teaching through annotation. The difference between a video and video annotation is that a video does not allow for annotation and unless a participant writes copious notes, they may not recall the information shared once viewed. Throughout Covid-19, videos of lessons and Zoom were vital and continued to support teachers in the classroom. The additional beauty of video is that student teachers can be placed anywhere in the world. As long as one has technological capabilities, support from afar can be given. Rather than think of video annotation being used solely for formal observations by field supervisors when applicable, what if used on site to learn more about teacher practice? For example, video annotation tools can support teacher education programs by giving student teachers an opportunity to record a portion of a lesson, then share with their cooperating teacher and field supervisor. During the debrief, the video would be used to analyze and follow up practice during the student teacher's field experience with both parties, which further develops skills for all.

Northern Michigan University's Teacher Education Program

Throughout the research, transformative learning was at the forefront, which is the process of effecting change in a *frame of reference* (Mezirow, 1991). Mezirow states that within transformative learning,

New information is only a resource in the adult learning process. To become meaningful, learning requires that new information be incorporated by the learner into an already well-developed symbolic frame of reference, an active process involving thought, feelings, and disposition. (Mezirow, 1997, p. 10)

Within Northern Michigan University's teacher program, student teachers have multiple times to reflect, especially after an observation with the field supervisor. After an observation, a debrief occurs between the teacher and field supervisor, followed by a written report that is sent to the student teacher. After review, the student teacher answers three reflection questions on each observational report.

1. Through example, describe what went well with this lesson before, during, and/or after?
2. Based on the lesson and the feedback you received, what changes would you make to this lesson if you taught it again to the same group of students?
3. Summarize the conversation you had with your Cooperating Teacher about this lesson and the feedback you received from your Field/University Supervisor.

Curious, what might occur if question one was completed immediately after the lesson, in the moment? By doing so, this would allow the student teacher to notate their exact thoughts and feelings in the moment. Therefore, a recommendation is to revise the observational report. This would mean time must be included within the lesson plan for completion and the cooperating teacher would be made aware. By answering question one immediately after, this would also spark good conversation between student teacher and field supervisor during the debrief, rather

than the student teacher completing all three questions after the debrief. In essence, the cycle of reflection will have already begun.

Shifting the timeframe when student teachers reflect, may ultimately support change in teaching practice. While taking transformative learning theory into consideration and by invoking change within student teachers, the researcher is recommending shifting question one on the current Northern Michigan University observational report to be completed immediately after the observation. This will garner current thinking, which can then be used to support conversations amongst the student teacher and field supervisor throughout the duration of placement, ideally changing student teacher practice.

Limitations

The researcher supervised five student teachers and three chose to participate, while being 60%, also limited the amount of data received. However, Creswell (2012) states, “It is typical in qualitative research to study a few individuals or cases. This is due to the overall ability of a researcher to provide an in-depth picture which diminishes with the addition of each new individual” (p. 209).

Another limitation is the fact that only student teachers participated. While this was the premise of this particular study, giving credentialed teachers with various levels of experience an opportunity to share their thinking would enhance the findings, potentially finding additional themes or giving credence to the ones already found. It would also give further evidence to *how* and *if* reflection changes teaching practice.

In addition, a limitation arises when the student teacher no longer has a cooperating teacher and they are on their own. This is why the dynamics of reflection on one’s own and with others needs to be taught and completed consistently. Not only for a deeper understanding but for

accountability purposes. There are many methods to support teacher reflection: end of day reflection, daily rating system, daily binder worksheets, weekly reflection, using two column journaling and many others. While supportive in measure, do they actually fuel change? For example, the following four questions are listed on a daily reflection sheet used at district X:

1. Which students stood out today? Why?
2. What did not work or could have been more effective?
3. What was missing or needed?
4. What worked really well today?

Although helpful, how will each question promote change in teaching practice? We need to take a more direct approach and ask what changes must occur based on the lesson outcome. For example, “Teacher X noticed Y and the following change will occur tomorrow because of Z.” While lesson planning is essential, critical reflection must occur. Ultimately, intentional reflection is needed to make revisions to lessons, which invariably will change teaching practice, providing one is reflecting with good intent.

Recommendations for Future Research

Does reflection ultimately change teaching practice? The theoretical framework used was transformative learning theory. Mezirow believes in two types of learning: instrumental and communicative. Instrumental involves knowledge, problem solving, and procedural tasks. While communicative learning focuses on how one communicates their emotions and needs (Taylor & Cranton, 2009). Essentially, the learner is aware of a challenge or dilemma, followed by reflecting critically, and testing its validity. If we want learners to succeed, they cannot be afraid to make mistakes. The irony is that the key to transformative learning is being critically reflective but it can also be considered a weakness. Every teacher will encounter situations and dilemmas inside classrooms but how does one guarantee it will be resolved?

Another question to ask, does reflection ultimately change teaching practice and thus serve as a catalyst for student achievement? Based upon this study, more evidence is required. A longitudinal study could in fact focus on change in teaching practices based upon reflective behavior and its impact on achievement over time.

Further, it is evident that time is the leading challenge amongst student teachers infusing reflection into their practice. Knowing this critical component gives programs an opportunity to continually be mindful of how time is partitioned and used daily. A shift in thinking is necessary, especially when noting that reflection is an overarching goal, however, what evidence is shown that reflection makes a difference? This is the missing link. Evidence.

Ultimately, this study raised more questions than answers, however the data is clear. There is a disconnect between reflection and changing teaching practice long term. In the here and now, it *may* change, but changing professional behavior in order to impact our students is one that needs constant support and opportunities for change.

Conclusion

This study enabled the researcher to provide valuable insight into the reflection process. According to these results, student teachers need time and support for reflection. Time must be given to reflect with intention, along with supportive measures such as *how* and *why* reflection is important during teaching, followed by accountability to promote change. In addition, the reflective process is noteworthy. Many understand the term reflection, but many do not inherently know or are aware of the reflective process. The process gives formulaic advice and sequential steps. The data from this study is a helpful starting point for education programs and schools to think in terms of how reflection, the reflective process, and opportunities for reflection are formulated and how they will guide and change teaching practice.

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APPENDIX A

Informed Consent

Northern Michigan University: School of Education, Leadership, and Public Service

Project Study: How do student teachers use reflection to change practices during student teaching experiences?

IRB Approval Number: HS21-1217

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

The purpose of this study is to learn how reflection changes teaching practices.

What you will be asked to do in the study:

As your field supervisor, reflection will be a common theme and discussion throughout the semester. During our final session, you will be asked open ended questions during a ZOOM meeting about reflection and reflection practices. Thereafter, the information learned will be thematically coded and added to my body of research.

Time required:

Approximately 60 minutes for final recorded session.

Risks and Benefits:

There are no known risks associated with this study, as it is informative in nature to support our understanding of how reflection plays a part in our day-to-day teaching practices. The expected benefits of your participation is the information about your experiences. The potential benefits of the study include providing you with a safe, non-judgmental outlet for you to express your honest views. Moreover, what we learn from this research could be used to make policy changes.

Incentive or Compensation:

There is no incentive for participating; therefore, you will not be adversely affected in any way if you choose not to participate.

Confidentiality:

Your identity will be kept confidential to the extent provided by law. Your information will be de-identified by an assigned code number. Your name will not be used in any report or publication.

Voluntary participation:

Your participation in this study is completely voluntary. You have the right to withdraw from the study at any time without consequence or penalty.

Whom to contact if you have questions about the study:

Any questions you have regarding the nature of this research project will be answered by the principal researcher who can be contacted as follows: Kimberly Salter, Ed.S. Candidate (226-350-8155) kisalter@nmu.edu.

Agreement:

If you wish to participate in this study, please sign the form below. You are signing it with full knowledge of the nature and purpose of the procedures.

Participant's Name:

Print _____

Signature _____ (Date) _____

I understand that I will be *audio or video recorded digitally* by the researcher. These files will be kept by the researcher on a password-protected computer. I understand that only the researcher will have access to these files.

Video recording of study activities

Sessions may be video recorded to assist with the accuracy of your responses. You have the right to refuse the recording. Please select one of the following options:

I consent to video recording: Yes _____ No _____

Audio Recording of Study Activities

Sessions may be audio recorded to assist with the accuracy of your responses. You have the right to refuse the audio recording. Please select one of the following options:

I consent to audio recording: Yes _____ No _____

APPENDIX B

Interview Questions

The process was unstructured, meaning participants had an opportunity to speak candidly.

According to Creswell and Creswell (2018), the total number of questions should be between 5-

10. Throughout the final session, phrases such as *tell me more*, *you mentioned*, and others were used to give participants an opportunity to delve deeper.

In the context of your student teaching experience,

1. What have you experienced in terms of reflection?
2. What does your reflection process involve/entail?
3. How does reflection support your teaching practice?
4. What situations or contexts have typically influenced your reflection experience?
5. Tell me about a practice you changed based on reflection.
6. What are the biggest obstacles to improving reflection practice and how will you overcome them?

APPENDIX C

IRB APPROVAL



Graduate Studies and Research
Marquette, MI 49855-5301
906-227-2300
www.nmu.edu/graduatesstudies/

Memorandum

TO: Bethney Bergh
Kimberly Salter
School of Education, Leadership, and Public Service
Northern Michigan University

DATE: March 31, 2022

FROM: Lisa Schade Eckert
Dean of Graduate Studies and Research

SUBJECT: IRB Proposal HS21-1217

IRB Approval Date 9/15/2021

Proposed Project Dates: **8/23/2021 – 12/31/2021**

“The Need For Introspective Analysis During Teaching”

Your proposal “The Need For Introspective Analysis During Teaching” has been approved by the NMU Institutional Review Board. Include your proposal number (HS21-1217) on all research materials and on any correspondence regarding this project.

- A. If a subject suffers an injury during research, or if there is an incident of non-compliance with IRB policies and procedures, you must take immediate action to assist the subject and notify the IRB chair (dereande@nmu.edu) and NMU’s IRB administrator (leckert@nmu.edu) within 48 hours. Additionally, you must complete an Unanticipated Problem or Adverse Event Form for Research Involving Human Subjects.
- B. Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant.
- C. If you find that modifications of investigators, methods, or procedures are necessary, you must submit a Project Modification Form for Research Involving Human Subjects before collecting data. Any changes or revisions to your approved research plan must be approved by the IRB prior to implementation.

Until further guidance, per CDC guidelines, the PI is responsible for obtaining signatures on the COVID-19 Researcher Agreement and Release and COVID-19 Research Participant Agreement and Release forms for any in person research and following any COVID guidelines in their research location.

All forms can be found at the NMU Grants and Research website:

<http://www.nmu.edu/grantsandresearch/node/102>