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BECOMING A REFLECTIVE PRACTITIONER: AN ANALYSIS OF STUDENT TEACHER REFLECTION

THUNSINEE MUANGTHONG

169 Pages

This qualitative study aimed to understand how student teachers reflected on their teaching practice during their student teaching semester and their perceptions on using reflection as a tool to develop their teaching practices. One hundred and twenty-four written and oral reflections by fifteen student teachers were analyzed to categorize their reflections. In addition, semi-structured interviews were conducted with four participants to gain an in-depth understanding of their perceptions on reflection. The findings showed that student teachers' reflections addressed five main themes (instruction, management, relationships, learning experiences, and characteristics of effective teachers), spanned four types (summary, descriptive, comparative, and transformative), and that student teachers structured their written and oral reflection in various ways, including (multiple types and multiple themes, one type with multiple themes, multiple types with one theme, and one type and one theme). Student teachers' perceptions on reflection focused on process and outcome. It is important to note that even though student teachers reflect in different themes, types, or structures, they see reflective thinking assignments as a useful tool to help them develop their teaching practices. Reflection on their own practice helped student teachers look back to see if there was any problem happened so that they could connect to their knowledge and take action to develop their teaching practices. The study has important implications for teacher educators, teacher preparation programs, cooperating teachers, and student teachers. Teacher educators can encourage student teachers to

recognize that reflective thinking is a common process for learning from their own experiences.

The knowledge of themes, types, structures, and perceptions of reflection can be used to inform how teacher educators should assign reflection assignments for student teachers. Future research can be done on various factors such as types of reflection assignments, duration of time to collect the data, groups of participants, or the use of contemplative practices to help student teachers focus more on their reflective practices.

KEYWORDS: contemplative practices; perceptions; reflection; reflective practice; student teachers; teacher education

BECOMING A REFLECTIVE PRACTITIONER: AN ANALYSIS OF STUDENT TEACHER
REFLECTION

THUNSINEE MUANGTHONG

A Dissertation Submitted in Partial
Fulfillment of the Requirements
for the Degree of

DOCTOR OF EDUCATION

School of Teaching and Learning

ILLINOIS STATE UNIVERSITY

2023

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BECOMING A REFLECTIVE PRACTITIONER: AN ANALYSIS OF STUDENT TEACHER
REFLECTION

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CONTENTS

	Page
ACKNOWLEDGMENTS	i
TABLES	x
FIGURES	xi
CHAPTER I: INTRODUCTION	1
Statement of the Problem	3
Personal Experiences on Reflection	6
Types of Reflection	10
Purpose of the Study	11
Significance of the Study	13
CHAPTER II: LITERATURE REVIEW	14
Definition of Reflection	14
Levels of Reflection	15
Types of Reflection	18
Importance of Reflection	20
Structures for Teaching Reflection	22
Guided Questions for Reflection	22
Action Research	25
Collaborative Approaches	27
Strategies to Support Reflection	30
Written Reflection	30
Oral Reflection	31

Technology Tools	32
Mixed Strategies	34
Preservice Teachers' Perceptions	35
What should be Provided for Preservice Teachers?	38
Gaps Found from Literature Review	40
Research Questions	41
Conclusion	42
CHAPTER III: METHODOLOGY	44
Introduction	44
Theoretical Frameworks	45
A Cycle of Reflection	45
Reflection Cycles Based on Problems	46
Reflection for Actions	48
Typologies for Reflection Frameworks	50
Researcher Positionality	51
Research Methods	53
Context and Participants	53
Data Collection	55
Written and Oral Reflection Assignments	56
Semi-Structured Interviews	58
Data Analysis	59
Phase 1: Inductive and Deductive Coding of Written and Oral Reflections	60
Inductive Coding	60

Deductive Coding	62
Summary	65
Descriptive reflection	66
Comparative reflection	67
Transformative reflection	67
Phase 2: Open Coding of Interviews	69
Phase 3: Comparison between Written and Oral Reflections and Perceptions	70
Trustworthiness	71
Triangulation	71
Peer Debriefing	72
Reflexive Journal	72
Ethical Treatment of Human Subjects	72
Summary	73
CHAPTER IV: FINDINGS	74
Reflection Topics	74
Instruction: Teaching, Planning, and Assessment	76
Teaching	76
Planning	77
Assessment	78
Management: Behavior, Classroom, and Time	79
Behavior Management	80
Classroom Management	81
Time Management	82

Relationships with Students, Cooperating Teachers, and Parents	83
Relationships with Students	83
Relationships with Cooperative Teachers	84
Relationships with Parents	85
Learning Experiences: Cooperating Teachers, Practice, and Reflection	86
Learning Experiences from Cooperating Teachers	87
Learning Experiences from Practice	87
Learning Experience from Reflection	88
Characteristics of Effective Teachers: Diversity, Flexibility, and Confidence	89
Diversity	89
Flexibility	90
Confidence	91
Reflection Structures	91
Multiple Types and Multiple Themes	92
One Type with Multiple Themes	94
Multiple Types with One Theme	95
One Type and one Theme	96
Student Teacher Perceptions on Reflection	97
Reflection as Process	97
Opportunities to Look Back	97
Opportunities to Learn from Experiences	98
Opportunities to Plan for Future Lessons	99
Reflection as Outcome	100

Improve Teaching Practices	100
Change	101
Relationships between Student Teachers' Perceptions on Reflection and their Reflection	
Practices	102
Participant 1	102
The Changing Perspective on Reflection	103
Honest Feedback and Authenticity	104
Plan to Continue Reflecting in the Future	105
Participant 2	107
Feedback to Oneself	109
Reflective Thinking Needs to be Practiced	109
Reflection Helps in Solving Problems	111
Participant 3	112
Reflecting with Other People Provides Different Ideas	113
Learn from Reflecting Consistency on a Specific Issue	114
Participant 9	115
Mixed feeling	116
Reflecting with Cooperating Teacher Enhanced Confidence	117
CHAPTER V: DISCUSSION	120
Benefits of Reflection Assignments	120
Planning for Instruction	120
Learning Management Skills	121
Building Relationships	122

Applying Knowledge from Learning Experience	123
Cultivating Effective Characteristics of Teachers	123
Challenges of Reflection Assignments	124
Definition of Reflection	124
Perspectives of Reflection	125
Designing Tasks for Reflection	126
Student Teachers' Perceptions on Reflection	128
Reflection as Process	128
Reflection as Outcome	129
Relationship between Perceptions and Practices	130
Comparison to Previous Studies	132
Implications	135
Practical Implications	135
Implication for Teacher Educators	135
Implication for Teacher Preparation Programs	137
Implication for Cooperating Teachers	137
Implication for Student Teachers	138
Research Implications	139
Observation Phase	139
Groups of Participants	139
Duration of Time to Collect the Data	139
Incorporation of Contemplative Practices	140
Limitations	140

Reflection Assignments	140
Measurements	141
Time	141
Participants	141
Researcher's Reflection Experience	142
Reflexive Journal	142
Experience on Meditation	147
Reflecting with My Advisor	149
Guidance and Recommendation on Each Process	149
Sharing Perspectives	150
Asking Questions to Explore	150
Conclusion	151
REFERENCES	152
APPENDIX A: GUIDED QUESTIONS FOR WEEKLY REFLECTION ASSIGNMENTS	161
APPENDIX B: INTERVIEW QUESTIONS	163
APPENDIX C: RESEARCH QUESTIONS, DATA COLLECTION AND ANALYSIS	164
APPENDIX D: PARTICIPANT CONSENT FORM (FIRST RECRUITMENT)	166
APPENDIX E: PARTICIPANT CONSENT FORM (SECOND RECRUITMENT)	168

TABLES

Table	Page
1. Number and Mode of Reflections	57
2. Written and Oral Reflection Open Coding Samples	61
3. Written and Oral Reflection Axial Coding Samples	61
4. Types and Characteristics of Reflective Writing/ Coding Criteria	63
5. A Priori Codes Table	68
6. Interview Open Coding Samples	70

FIGURES

Figure	Page
1. Reflection Topics	75
2. Instruction Sub-themes	76
3. Management Sub-themes	79
4. Relationship Sub-themes	83
5. Learning Sub-themes	86
6. Characteristics Sub-themes	89
7. Reflection Types	92
8. Participant 1 Reflection Types	103
9. Participant 2 Reflection Types	108
10. Participant 3 Reflection Types	112
11. Participant 9 Reflection Types	116
12. How Meditation Helps in Reflection	149

CHAPTER I: INTRODUCTION

I had been teaching at Srinakharinwirot University Prasarnmit Demonstration School Secondary in Thailand for five years before I came to Illinois State University to study in a doctoral program in Teaching and Learning. Srinakharinwirot University is a public university in Bangkok, Thailand. The university was founded in 1949 as the first upper-education institution to concentrate solely on teacher training because there was a teacher shortage at that time. The elementary and secondary schools were established as demonstration schools for student teachers to practice their teaching each semester. Apart from teaching students from grades 1-12, some assigned teachers at demonstration schools are responsible for teaching preservice teachers for coursework relating teaching experience in school or being their mentor teachers for their student teaching experience. Student teachers work with their mentor teachers at schools to observe their classes at the beginning of the semester. Then, they create their own lesson plans and teach during the semester. University supervisors come to the school to observe student teachers a few times during the semester.

As I was working as a mentor teacher to help guide student teachers at my school, I was open to student teachers' ideas and let them create the lesson for teaching themselves. I did not tell them what to do or not to do, but I encouraged them to try what they wanted to do with students. When student teachers were not able to follow their plans or the lesson did not go as planned, I helped them reflect on what happened in the class and asked them if they could change anything to make the lesson better next time.

To pass the student teaching practicum, student teachers are required to submit their student teacher portfolios in which they keep journals about their teaching experiences. There are three sections in the portfolio which provide space for written reflection from student teachers,

mentor teachers, and university supervisors. There are four times during the semester that student teachers, mentor teachers, and university supervisors write a journal about each student teacher's experiences in the classes they teach during the semester. Typically, as a mentor teacher, I wrote about student teachers' progress during the semester; such as how they managed and solved problems that occurred in the classroom, their strengths and weaknesses, and what they learned during their teaching practice. Student teachers also wrote reflections about their experiences in the classroom. After every class, I talked to student teachers about how they felt about their teaching. Sometimes student teachers felt frustrated that they were not able to follow their plans and sometimes they felt happy that something worked very well in the classroom. I realized that talking to student teachers after each class helped them reflect on what they experienced and was helpful for their teaching practice. As they learned what worked well or did not work well, they planned better lessons.

In my role as a mentor teacher, I saw the importance of reflection to help students develop their teaching practice. Alsuhaibani (2019) confirmed that reflective teaching helped student teachers develop their teaching practice by critically analyzing their teaching practices to consider alternative routes and consequences from their teaching. She conducted a study on student teachers' perceptions and practices of reflective teaching by collecting student teachers' reflection and analyzing them through three levels of reflections: recall, rationalization, and reflectivity. The results showed that student teachers rarely produced deep critical reflection. They presented only how students reacted in the classroom as a description of the events but did not think about the reasons behind those actions or what could be a solution to help students. However, after the discussion with student teachers about reflective teaching, they agreed that reflection is a helpful tool to assist them through their teaching experience as they consider it as a

plan for improvement. Alsuhaibani (2019) concluded that engaging in reflective practice can help student teachers develop a deep understanding of their teaching, professional growth, decision-making skills, and confidence in teaching.

My experiences as a mentor teacher and my focus on student teacher reflection throughout my doctoral coursework have informed my study on student teacher reflection. I am particularly interested in the types of reflection student teachers use and how each type may help them improve their teaching practice in different ways. Also, I would like to investigate student teachers' perceptions on reflection to see if they think reflection helps them improve their teaching practice. I would like to investigate the process of how student teachers reflect and ask what support they need from mentor teachers and/or university supervisors during their time in student teaching. Findings from this study may have implications for how university instructors structure the reflection process to support more productive reflection from preservice teachers' perspectives. As a mentor teacher, I would like to help student teachers to reflect in various ways and for various purposes before they have to make decisions in their teaching. Therefore, findings from this study might also inform mentor teachers about how to guide student teachers to reflect during their student teaching. As student teachers are supported on reflection, they might learn to understand the value of reflection and apply it in their teaching.

Statement of the Problem

Based on my experience, the problem that I found from student teachers when they reflected on their teaching practice was that they were usually describing what happened in class. The results from the analysis of written essays showed clear evidence of student teachers that the largest proportion of coded units were descriptive reflection (Hatton & Smith, 1995; Ward & McCotter, 2004; Alsuhaibani, 2019). Alsuhaibani (2019) claimed that student teachers'

reflections were mostly descriptive because they did not really engage in effective reflection practices. Student teachers typically reflect at a surface level that might not be sufficient for them to connect theory and practice in ways that lead them to make decisions in their teaching.

Teaching preservice teachers to reflect is difficult because the term reflection is ambiguous, and it might create different understanding between student teachers and their instructors. When instructors told student teachers to reflect “deeper,” student teachers might have a difficult time figuring out what “deeper” meant. It is difficult for novices to learn what their instructors fail to describe (Jay and Johnson, 2002). This is a result of the problem from the lack of knowledge of teacher educators and mentors on teaching reflection. As a past mentor teacher, I lacked the knowledge of how to provide effective reflection practices to the student teachers that I worked with. I tried various strategies to support their reflective thinking. For example, I prompted them to think about alternative ways of teaching by asking questions or helped them connect the ideas between theories and practice. Student teachers then considered more alternatives in teaching and compared and contrasted results that might happen if they change their teaching methods or strategies. I believe that thinking was natural, but the reflective habits of mind need to be taught (Dewey, 1933). Therefore, in order to be able to guide student teachers to be more reflective, it is important to understand their thinking process and perceptions on reflection to provide what student teachers need to support their developing practices.

The reason I would like to help student teachers to be more reflective during their student teaching experience is to support their development of teaching practices for their future teaching careers. I learned that reflecting on my own experiences really helped me as a teacher and also in any situation that happened in my life. When I learned from my mistakes in the past, I was more

careful about making the same mistakes again or finding a way to manage to get through specific problems thoughtfully. Loughran (2002) suggested that “experience alone does not lead to learning; reflection on experience is essential” (p. 35). Reflection helps develop one’s understanding of a practice by framing and reframing or finding the solutions to problems. What is learned from reflection is valuable and helps one construct their knowledge or shape their future practice. I started to realize that being reflective could help me deal with situations that happen in my daily life by considering challenges and figuring out how to cope with each issue from various perspectives. For example, I decided to rollerblade again as an adult because I remembered having a lot of fun and joy when I did that as a ten-year-old girl. As an adult, I felt scared of doing it again since I had not done this for a long time. I could not remember how many times I fell when I was young. I tried to recall the memories about how to not fall down and not to make myself hurt and bleed again as the same as in the past. Reflection on experience helped me think about what I did in the past and how I should do it now. When I started to figure out how it worked, I really enjoyed the moment. I started thinking about the process of learning to do new things. It is not easy the first time that I do something new, but I can learn from my experiences or mistakes to improve or make it better next time. As I reflected on the experience about how to rollerblade, now I do not fall again and learn how to protect myself from falling.

This experience reminds me how student teachers learn to teach. As they are new at teaching, they might encounter situations that they do not know how to manage. However, they can learn from their experience and plan for future actions through their reflection. Learning from their reflection might help student teachers form knowledge about teaching and improve their practice to fit student needs. Reflection provides space and time for student teachers to think about their teaching experience. When they learn from their own experiences, they form

their own knowledge about teaching such as how to improve their teaching practice. Experiences that they learn themselves make them understand certain situations better than lessons from theories or their professors.

Another point that I can relate from rollerblading and reflection is the adaptability. A difficult part for beginners is to stop when rollerblading downhill. As the slope makes the speed faster, it is difficult to control the speed or stop immediately. Although beginners have learned from theory about the action to stop, they might find it difficult to do in practice. The surface of the road might not be the same as what they have learned or there might be more factors that impact their motion such as unexpected obstructions. This is similar to student teachers who have learned from teaching theory, but they might find some situation that is different in their teaching practice. What they are taught from their education program might not always apply within the real classroom that they face. Student teachers should learn to adapt knowledge when they have unexpected situations in the classroom. This kind of thinking process of learning from new experiences occurs when student teachers have time to reflect on their teaching. They will have time to think about what they have done, what should be improved, and how they can make a better decision or deal with a similar situation effectively if it happens again. Reflection is important for student teachers because they will never be prepared from their education programs to face every situation that might happen in their future teaching. They need reflective skills to cope with any situation that they will face and reflect on that event and find a solution to their teaching.

Personal Experiences on Reflection

I chose to focus on how to teach student teachers to reflect because I believe that it might help student teachers to have guidelines to follow. I found that when student teachers were

assigned to reflect, there were no clear or detailed methods available to engage student teachers in reflection. Spalding and Wilson's (2002) study showed that when preservice teachers were asked to reflect, they did not know how to do it and only took it as assignments. They studied students' written reflections and when students were required to write a weekly reflective journal, some of them remarked "I hope this is what you want." Robinson and Rousseau's (2018) study on student teachers' perceptions on reflection also presented student teachers' understanding about reflection in a similar way. Student teachers did not put much effort into reflection unless a mark was given. They tried to write what they thought the teacher educator expected from them if they thought it might be assessed and saw little purpose in reflective practice if it was not assessed. This is not a goal for teacher educators to make students submit their reflection as an assignment, but they should use reflection as a vehicle for personal and professional development in the preservice year and beyond.

Based on my own experience as a student, I have never been taught how to reflect or learned about different types of reflection. Teachers usually required students to write reflections as assignments in each class without telling them how to do it or giving a clear definition of how they want students to reflect. Yost et al. (2000) pointed out that even in higher education, such as many doctoral programs that prepare teacher educators do not pay enough attention to reflection. They focus more on curricula, instruction, and research specific to a major. They suggested that reflection is important for education research and to prepare teacher educators for understanding the vital importance of developing critical thinking in novice teachers.

Fortunately, during the program at Illinois State University, I had experienced a course that inspired me to realize the value of reflection in teacher education again. The course that focused on reflection was Critical Studies in Diversity and Education. As I researched more on

this area, I found this is very challenging for teacher educators to teach reflection in the teacher preparation program. Although there might not be specific instruction for reflection, I think at least this can raise awareness of teacher educators to consider reflection as an important element for preparing teachers to have this lifelong learning skill.

It was our first class of Critical Studies in Diversity and Education that the professor asked the four students in his class to sit silently for ten minutes with relaxing music on. Some of us looked at each other as we never had an experience like this in the classroom. We felt time pass very slowly for just ten minutes. Then, the professor asked us to write about anything on our mind in our notebooks for five minutes. After the first time, the professor continued doing this activity every week for 15 minutes at the beginning of the class. Sometimes the professor told us to walk around the campus and discover somewhere we had never been before. Sometimes we had a conversation in pairs and took turns telling secret stories and practiced deep listening to each other. After all activities, we returned to class and spent five to ten minutes writing anything that came up in our heads in our notebooks. When the last week of the semester (Week 16) came, everybody realized the value of doing this practice every week. It was space for teachers to spend time with their inner selves and reflect on what happened throughout the day, week, month, or entire lives. We understood that 15 minutes each week was valuable for us. In my opinion, that was the best way for teaching students to reflect, because I learned how to reflect from my own experience and understood how it was useful to me. Although this is not an explicit teaching to reflect step by step, providing space and time for students to reflect with activities provided each week gave students opportunities to reflect on their own self. I understood why I needed time to be with myself and saw what was going on inside of me. Sometimes, I spent those times reflecting on the reading from the textbooks that were assigned

each week and realized that I thought more deeply about the reading and gained new perspectives from the reading while I was walking. Also, there were many times that I started to connect theories in the reading to my real life and construct new knowledge for myself. For example, there was a week in February that the professor gave us a choice between staying in the building or walking outside for 15 minutes before we started writing in our reflection journals. I chose to walk outside even though it was very cold in winter. However, I felt happy that I chose to do something that I never did before, and it was a good experience for me. It was related to the reading of the week about a student's choice. I understood better how happy students will be if teachers give them a choice in learning such as reading choices, assignment choices, or assessment choices. Students might feel as if they are a part of the learning process when they make their own choice in learning. Therefore, I used the experience that I got myself to understand how students will feel if teachers do not only teach from their own perspective but let students choose for themselves what they want to learn.

The same question that was asked every week right after everybody finished writing in their notebook was "How do you feel?". Everybody had opportunities to share their thoughts and feelings. The feeling of presenting your voice and being heard was the moment that should happen in every classroom. This is one of the examples of how the professor taught us to reflect on our feelings. Time and space were provided in class for everyone to share their thoughts. I realized that it was a good practice for everybody to reflect on themselves, but it is still difficult for people to set the time for reflecting on their life regularly. In the final week, everybody agreed to continue doing this kind of practice both in daily life and classroom teaching. This experience confirmed how important reflection is and how it can help people see things in their life clearly. As a result, I think opportunities to reflect are important for student teachers because

when they experience something in their teaching, they might need time to reflect on it to make better practice in future classes. However, the process of reflection requires “preparing a team of mentors, the creation of a programmatic course sequence, and various reflective assignments in a range of instructional contexts- all of which require a culture of trust and support” (Jay & Johnson, 2002, p. 84). It is important that each part of the teacher education program supports student teachers to become reflective practitioners.

Types of Reflection

As reflection helps student teachers think back on their teaching practice, different types of reflections support students differently. Researchers introduced various frameworks, structures, or models of reflection as tools to teach or evaluate the quality of reflection. The classification of reflection was divided based on various factors such as time, process, level, and stages. For example, Schön (1983) uses time as a frame to introduce concepts of reflection-on-action and reflection-in-action which happen after or during the time of teaching. Manen (1977) offers three levels of reflection: the technical, the practical, and the critical which are hierarchical levels. Categorizing types of reflection by using “levels” implies that the higher the level, the better the reflection. However, as Jay and Johnson (2002) found that levels are not necessary, student teachers do not have to meet all levels of reflection. Reflecting from various perspectives helps them expand their thinking on teaching practice. Therefore, knowing that it is difficult for student teachers to reach higher levels of reflection, I prefer to use the word “types” of reflection rather than “levels” of reflection to encourage students to reflect from various perspectives.

The word “levels” can be seen as “categories” or “types” of reflection that guide reflective practice and encourage multiple points of view to reflect (Jay & Johnson, 2002). So, student teachers do not have a sense of failure by not reaching the higher levels of reflection.

One study found that although we want student teachers to reflect in higher levels, it is still difficult for student teachers to reach the highest level of reflection. Azimi et al. (2019) investigated 41 student teachers' written reflections during their teaching practice to see how they reflected. It was found that most of the student teachers moved from reflection at a routine level to technical level but rarely reached the higher levels of reflection such as dialogic or critical levels of reflection. I would like to understand how each type of reflection helps student teachers develop their teaching practice. Student teachers might learn to take advantage of reflection in their teaching practice little by little. Reflection is considered important for preservice teachers' teaching practice, however, Feiman-Nemser (2001) reveals it is along a continuum of growth for preservice teachers. Although they may not reach the higher levels of reflection during their student teaching, they can see the significance of the practice of being a reflective teacher and might reach higher levels of reflection later in their teaching careers if they continue reflecting until it becomes part of their teacher identity.

Purpose of the Study

The purpose of this study was to learn about student teacher reflection to understand how they reflect on their teaching practice. From their reflection, I could learn about their greatest concerns about their teaching practice or some positive aspects that they would like to continue. Student teachers selected some issues or problems that were interesting for them to reflect on. Also, I could learn about how student teachers used reflection as a tool to help them develop their teaching practice. I saw different types of reflections from different students so that I could learn how each type of reflection helped student teachers change their teaching practice. As I reviewed literature on reflection for teacher education, I learned that there were various approaches, strategies, or tools to help student teachers reflect and they might need different

methods of reflection (Hatton & Smith, 1995; Jay & Johnson 2002; Ward & McCotter, 2004). Quality of reflection appeared to be influenced by not only having opportunities to reflect, but also by being able to do so in a variety of ways (Pultorak, 1993; Spalding & Wilson, 2002). Therefore, I would like to understand how student teachers reflect. I collected student teachers' reflection assignments during the student teaching semester. The guided questions for reflection assignment did not limit their ideas to share their thoughts on teaching practice but aimed to help them reflect on various aspects of their teaching. At the end of the semester, I interviewed some of student teachers about their perceptions on reflection or how they thought reflection was beneficial for their teaching practices. The study aims to understand their process of reflection and their perceptions on reflection such as strategies that they used for reflection or guidance that they receive from mentor teachers or university advisors. Additionally, the study has an aim to increase an awareness of being reflective for student teachers as I believe that it would help student teachers have opportunities to look back on their teaching experience and learn to construct their own knowledge of teaching. Schön (1983) noted that novice teachers should be engaged in reflection in and on their actions in order to understand the uncertain and conflicted situations of teaching practice. People who work in education or other fields know that reflection is beneficial for their work or their life. However, it might be hard for them to do it systematically or how to make it more valuable by thinking more deeply or critically to make it the most beneficial for their teaching practice. The study aims to provide student teachers' awareness of reflection. Participants will have opportunities to reflect and learn about different types of reflection. They may realize the value of reflection for improving their teaching practice as a novice teacher who could learn from their own experience and form their own knowledge.

Teacher educators would understand how student teachers reflected so that they could support student teachers to becoming reflective practitioners.

Significance of the Study

The study aims to gain a better understanding of the thinking process of student teachers through their written and oral reflections. I categorized themes and structures (themes and types) of reflection from student teachers' reflection assignments to see how student teachers thought reflection helped them in teaching practice in what way. The interview from student teachers' perceptions about how they understand and value their process of reflecting during their student teaching revealed if student teachers realized benefits of reflection in their teaching practice. I gained student teachers' perspectives on reflection if reflections helped student teachers improve their teaching practice in different ways. My goal was to provide alternative ways to support student teachers to reflect in various types of reflection as multiple types of reflection could benefit them differently in teaching practice. Therefore, this study would be significant for student teachers who would like to be reflective teachers to understand the process of reflection and learn about various types of reflection that would help them reflect in different ways, providing them with more alternatives in their teaching practice. Teacher educators would understand how student teachers reflected on their teaching practice and support them to have more opportunities to reflect during their teacher preparation programs. Also, as a mentor teacher, I think this helped me understand how student teachers reflect and understand what student teachers need from mentor teachers to support them to reflect during their student teaching.

CHAPTER II: LITERATURE REVIEW

In this chapter, I provide an overview of the definition of reflection, levels of reflection, types of reflection, and importance of reflection. I review literature related to student teacher reflection to investigate how research on reflection has been done including structures of teaching reflection, strategies to support reflection, and preservice teachers' perceptions on reflection. Then, I discuss what should be provided for student teachers, gaps found from the literature review, and introduce my research questions.

Definition of Reflection

Reflection is defined as the action of thinking about experience carefully to make decisions for future actions (Dewey, 1933; Whittaker & Garderen, 2009). Research studies (Tianen et al., 2018; Ward & McCotter, 2004) suggest that reflection is useful for preservice teachers to be reflective. Korthagen (2001) asserts if preservice teachers look back on action and carefully think about it, they can plan more intelligent actions for future decisions. However, it is difficult for them to reflect systematically, as they might not have been taught the reflective process (Bates et al., 2009; Freese, 2006; Griffin, 2003). It is important for teacher education programs to support preservice teachers with a systematic approach to reflection (Bean & Stevens, 2002; Collier, 1999; Davis, 2006; Hattan & Smith, 1995; Jay & Johnson, 2002) and to provide practice, so that they gain the characteristics that are required for reflective thinkers such as being contemplative and thoughtful (Francis, 1995).

Although preservice teachers learn theories for teaching during their education programs, it is not until they have opportunities to teach, often during student teaching, that they apply that knowledge (Bean & Stevens, 2002). In many teacher preparation programs, preservice teachers are “trained” in the way Dewey referred to “technical training” which restricted its goals to the

acquisition of the skills, techniques, and tools necessary to accomplish a particular type of work. Preservice teachers learn only the “how”s but not the “why”s of teaching” (Dewey, 1904). Teachers believe what they are taught from theories and use technical practices to students without logic or evidence to respond to student needs. They are taught in traditional approaches to be skilled technicians who respond to students’ behaviors with limited actions rather than careful thought (Valli, 1997). In real classrooms, there are problems that can occur differently from the theories that preservice teachers study in their programs. It is important for them to reflect on what they have experienced, so they can apply their knowledge to solve unique problems in the classroom. Schön (1983) asserts that you can learn more from your experience if you spend time reflecting on them. According to Schön, reflection is a thinking process through which preservice teachers learn to challenge themselves to think critically about what theories they can apply in novel situations. Through reflection, preservice teachers can analyze, or reframe, problems in their own context and consider strategies that can support their teaching (Schön, 1987).

Levels of Reflection

Korthagen (2001) pointed out that measuring reflection is difficult because the action of reflection occurs inside the head of the actor. However, many researchers (Manen, 1977; Hatton and Smith, 1995; King and Kitchener 2004; Ward and McCotter, 2004) have created frameworks to identify levels of reflection so that they can better understand how preservice teachers develop their reflection skill which, in turn, will benefit their learning outcomes (Ewart & Straw; 2005). Reflection does not only help preservice teachers understand themselves better and prepare them to deal with problems that might happen in the future, but it also impacts their actions toward

students which improves student learning outcomes (Gipe & Richards, 1992; Ostorga & Estrada, 2009). In this section, I will highlight four frameworks for thinking about levels of reflection.

In a study on linking ways of knowing with ways of being practical, Manen (1977) proposed three levels of reflection: technical level, practical level, and critical level. Teachers need to have a critical level of reflection to use the knowledge from the theories to make decisions in practice. Manen argued that teachers who reflect critically are involved in the process of making decisions during “daily planning, adapting materials, developing courses, arranging subject matter content, teaching, evaluating, and so forth” (p. 206). The first level is the technical level in which teachers find strategies to support their teaching without knowing which theory is better than the others or appropriate to apply with their students. The second level is the practical level when teachers discuss the value of teaching methods and decide which to use with students. Teachers try to analyze each student and understand the nature and quality of their education and their experience to make a practical choice. The last level is the critical level in which teachers examine how personal values might conflict with structural and societal constraints. Teachers who reflect critically pursue justice and equality in the educational process.

Hatton and Smith (1995) proposed a framework for types of reflection for development in teacher education. In their study, 60 preservice teachers were exposed to a range of strategies that might foster reflection. Preservice teachers were required to submit a written report, two self-evaluations, two videotapes of teaching, and a 20-minute interview with pairs. As a result of data analysis, the researchers identified four types of writing that constitute three types of reflection. Although there are four types of writing, the first one is descriptive writing which was not considered reflection by the researchers, but only a report of events that occur without explaining reasons or justifications. The next form is descriptive reflection which is not only a

description of events but provides some reasons for events or actions. Then, dialogic reflection is a looking back on the events and providing judgements and considering possible alternatives for self through exploring the experience. The last kind is critical reflection which involves giving reasons for decisions or events considering the broader historical, social, and/or political contexts.

King and Kitchener (2004) introduced seven stages of reflective judgement grouped in three levels; pre-reflective process, quasi-reflective think, and reflective thinking. The first three stages represent a pre-reflective process where knowledge is absolute, and beliefs are not generally examined. In pre-reflective thinking, the knowledge is assumed to be certain and there is only one correct answer for all questions. The next two stages are quasi-reflective thinking in which beliefs can be supported by specific contextual evidence but lack a critical stance. For quasi-reflective thinking, uncertainty is a part of the knowing process and evidence is understood as a key part of the knowing process. Different approaches or perspectives on controversial issues are welcome to contribute different ways of framing issues. The last two are reflective thinking in which knowledge is an outcome of inquiry, critical, and open for reasonable evidence. The last level is reflective thinking which requires us to use evidence and reason in supporting judgments consistently. New data or new perspectives may emerge as knowledge is constructed and reconstructed.

Ward and McCotter (2004) analyzed exemplars of preservice teacher reflection and developed a rubric for evaluating teacher reflection by examining existing frameworks for describing the qualities of reflection. After they reviewed literature on reflection frameworks from various studies, they utilized a grounded theory approach to develop their rubric by focusing on data they collected from preservice teacher reflection. Four levels of reflection

resulted from their study; routine, technical, dialogic, and transformative. First, the routine level was when preservice teachers did not focus on problems, or they blamed problems on others or on a lack of time and resources. This type of reflection did not change their practice or perspective. Second, the technical level is when preservice teachers reflect on narrow teaching tasks such as student engagements, but there are no new insights gained from this reflection. Third, the dialogic level is an act of asking questions, trying new approaches, and focusing on struggling students to support them. However, in the dialogic level of reflection, teachers do not consider student's perspective on problems. Fourth, the transformative level occurred when preservice teachers focused on students' problems and began self-questioning during their experience and continued looking for the answers. This level of reflection leads to a change of perspective and practice for preservice teachers.

Types of Reflection

Levels of reflection present hierarchical stages that imply the higher levels of reflection refer to the better quality of reflection and might help teachers teach better. However, reflection is also divided into categories without hierarchy. Each type of category presents how teachers apply it in their practice for different purposes.

Schön (1983) explained the concept of reflection by dividing it into three different actions; knowing-in-action, reflection-in-action, and reflection-on-action. "Knowing-in-action" is when a teacher uses their past experiences and understandings to form their teaching without realizing why they are doing specific performances. "Reflection-in-action" occurs when a teacher thinks about the reason why they perform their actions during the exact moment these actions are happening (Schön, 1983). "Reflection-on-action" is an act of recalling after the experience as a teacher reflects later. The difference is that reflection-on-action takes place after

the event has happened. In this stage, teachers make time later to reflect on their teaching, learning from the interactions and experiences with their students. Reflection-on-action may introduce an alternative way of teaching for future classes (Schön, 1983).

Jay and Johnson (2002) presented three types or dimensions of reflection which are descriptive, comparative, and critical reflection. They aimed to help students consider issues in their teaching deeply by presenting the three dimensions of thought. They believed that when students think as a process in reflection, it can provide powerful understanding. They called it a typology of reflection which is the tool that guides students to reflect from multiple points of view, but it is not meant to be a rigid hierarchy in which all its dimensions of reflection must be met. Reflection in different dimensions provides opportunities for students to understand their situation or their role as a teacher and make personal meaning of it. It also helps mentor teachers to frame the particular context to be examined by using typology guiding questions to support students to reflect in different types to think more about teaching and learning. Descriptive reflection is used to understand the context of the situation. Comparative reflection is used to attempt to understand the multiple perspectives of those involved. Critical reflection naturally arises as the students struggle to understand the situation in terms of broader educational issues and also in terms of action, they could take to change the situation.

Across studies (Manen, 1977; Schön, 1983; Hatton & Smith, 1995; Jay & Johnson, 2002; King & Kitchener, 2004; Ward & McCotter, 2004) on levels or categories of reflection, researchers generally agree on three levels or types of reflection although they use different terms to describe them. From the integration of various studies that discussed levels or types of reflection, we can conclude that the first level or type of reflection focuses on the routine aspects of teaching. It focuses mainly on classroom management, specific misbehaviors, and teaching

the content based on their own personal experiences or what they have learned in coursework (Manen, 1977). The second level or type of reflection occurs when preservice teachers combine theory and practice. They know how to deal with each situation, and they are willing to try different approaches for the best possible solution (Hatton & Smith, 1995). The last level or type of reflection is when preservice teachers are able to understand why they are teaching in a particular way based on their personal research into best practices. At this level, preservice teachers are willing to analyze their own teaching practices to promote student learning while considering societal and political aspects. This is the critical level in which theory and practice are combined into one so that there is improved student achievement using best practices (King & Kitchener, 2004). Spalding and Wilson (2002) concluded that even though preservice teachers received training in reflection, they did not reach the highest level of reflection. Therefore, it is sensible to not consider the framework of reflection as a hierarchy but as types and encourage, scaffold, and support students' abilities to generate all types of reflection.

In this study, I use the term "perspectives" to represent student teachers' types of reflection that they use because when student teachers reflect in different types of reflection, they consider a specific issue from various perspectives. Therefore, "perspectives" and "types" are used interchangeably.

Importance of Reflection

There are three main reasons why reflection is important for teachers. First, reflection is an act of consideration for why teachers teach. Dewey (1933) pointed out that teachers should ask questions about anything they are told to believe or have believed for a long time. It is important for teachers to realize that their responsibility for students is not only to transmit

knowledge. Being a reflective teacher is not only about learning how to teach, but teachers should also consider why they teach a certain lesson to students.

Second, reflection is a process that allows teachers to consider how they should teach. Being reflective means that teachers realize differences among students and try to set goals for each student to suit their ability to learn. Reflective thinking allows teachers to examine each situation carefully and to make instructional decisions based on careful consideration. Tiainen et al. (2018) conducted a study with three preservice teachers to understand their reflection processes. For six weeks, they observed, and video recorded discussions between mentors and preservice teachers after their teaching practices. Based on a video analysis, the researchers found that multiple unstructured opportunities to discuss and share their own observations and thoughts supported preservice teachers to frame and reframe their perceptions and understandings about their teaching practice. The researchers concluded that it is important for teacher educators and mentors to recognize the process of reflection and for preservice teachers to practice reflecting, as it will benefit their teaching professions.

Third, the critical level of reflection allows learners to analyze both individual experiences and social and political contexts that gives them a broader view of learning. According to Gray (2007), critical reflection is the highest level of reflection that preservice teachers can achieve through their teacher preparation program. Gray defined critical reflection as “making assessment of validity of one’s assumptions, examining both sources and consequences” (p. 497). Critical reflection promotes consciousness and allows human beings to consider aspects that challenge existing norms, and the existing social, cultural, and political status quo. Reflecting on these aspects may lead to a change in beliefs or raise a question to consider about the method of instruction to support students. In his study, Gray examined various

reflective processes and tools across different professions that provide support for critical reflection. He discussed the use of tools to facilitate critical reflection that had been traditionally used in education such as reflective metaphors, critical incident analysis, reflective journals, repertory grids, and concept mapping. He described the use and purpose of various tools as alternatives for a facilitator, coach, mentor, or peer group for critical reflection instruction. As teachers reach the level of critical reflection, it will allow them to make informed judgements that are not disrupted by inequality of social construction of power and knowledge. Knowing the importance of reflection in becoming and being a teacher, it is essential for teacher educators to explicitly teach preservice teachers to be reflective thinkers (Bates, et al., 2009; Malderez, et al., 2007). They should reflect on ways to support preservice teachers to be reflective. Teacher educators should understand types or levels of reflection and tools to help preservice teachers develop their reflective thoughts and actions.

Structures for Teaching Reflection

Based on a growing understanding about how reflection supports teaching and learning, teacher educators and researchers have developed and examined structures for explicitly teaching reflection and engaging preservice teachers in practicing reflection. There are three main structures that are categorized across studies: guided questions for reflection, action research, and collaborative approach. In some studies, researchers combine many strategies for teaching reflection, but I will look at each strategy separately to understand each one clearly.

Guided Questions for Reflection

Guided questions are used as a guideline for preservice teachers to reflect. Guided questions help them focus on each aspect of classroom experience and support them in making

connections between theories and practice. In this section, I highlight three studies in which researchers used different types of guided questions to support preservice teacher reflection.

Snyder (2011) introduced a teaching evaluation form as an outline for preservice teachers to focus their attention on certain aspects of a lesson to write reflective comments within each category. It was considered as a tool for preservice teachers to see themselves and reflect on categories such as voice level, posture, eye contact, lesson plan sequence, pacing, classroom management, teaching methods, error detection/student playing errors, age-appropriate materials and pedagogy. Preservice teachers recorded themselves teaching in classrooms and used the outline for writing their reflection by focusing on certain aspects. Preservice teachers planned to reduce the number of problems they noticed in video observation on each aspect, to make their instructions more effective for future teaching. Researchers analyzed excerpts from video reflections of seventy music education students to learn what preservice teachers notice about their own teaching and improve their teaching from their reflections. Researchers concluded that using a simple outline to guide the reflective comments can broaden preservice teachers' perspectives. Once a teacher becomes aware of all the aspects of the classroom, it is possible to bring focus to each area in turn, with the goal of improving overall instruction. Following a simple outline can help teachers improve their instructional effectiveness as long as they are willing to apply what they have learned in their reflections to the classroom.

Duquette and Dabrowski (2016) used prompts or interview questions to support preservice teacher's' thinking process for their reflection. Participants were four preservice teachers during their practicum in the teacher education program. They were given a form with prompt questions on which they recorded the strategies they used in classrooms. It was intended to help them organize their daily observations and reflections on strategies they used in

classrooms. Questions such as “Are the expectations / learning goals for the lesson being met?,” “How do you know?,” “What went well?,” “What needs improvement?,” and “Next steps” served as prompts to guide the type of thinking that might not occur in preservice teachers’ descriptive written reflections. Researchers used Ward and McCotter’s (2004) framework as a tool to understand students’ level of reflection. Researchers read and coded the data from the written reflection and categorized similarities and differences among the participants to identify themes. The researchers found that preservice teachers engaged in various levels of reflection. Most of the reflection was at the second and third levels in which the preservice teachers were concerned with choosing instructional skills, which in turn improved their students’ learning. The guided questions from teacher educators help preservice teachers further analyze the situations to deepen their understanding of a particular problem.

Hamilton and Duinen (2018) introduced the idea of a Targeted Field Observation Guide to develop students’ ability to purposefully observe and consider various aspects of teaching and learning in order to reflect with purpose. The Targeted Field Observation Guide framed students’ responses so they were able to connect the various aspects of teaching and learning in the guide to support field-based observations. The guide focused on specific targets that preservice teachers could choose: behavior, pedagogy, assessment, management, and motivation. Researchers coded preservice teachers’ weekly computer-mediated discussions centered on their uses of the Targeted Field Observation Guide. It was sought to identify similarities and differences between the ways preservice teachers utilized each target in their weekly reflections. As a result, there were two types of posts that researchers identified; “report-based” posts (direct observations) and “analysis-based” posts (include elements of analysis). Researchers found in the analysis-based posts that in addition to sharing observations from their weekly field placement

experiences, preservice teachers included aspects of analysis and interpretation based on what they reported and explicit course-based connections. Peers' comments in response to analysis-based posts appeared to afford additional opportunities for further dialogue and connections, sometimes connected to the field and in other instances connected to specific course content. Therefore, the Target Field Observation Guide gave preservice teachers a specific point across the variety of teaching and learning tasks, experiences, and situations they noticed, observed, and encountered in their teaching field experience; and it helped them to better articulate situations in their reflections that could be more easily understood by their peers and instructor.

Guided questions can be formed in various patterns to promote critical reflection for different purposes. While preservice teachers are in different stages during their education programs, such as early, middle, or late in the program, teacher educators should provide different activities that help scaffold their reflective skills to be able to use their experience and practice in each activity appropriately.

Action Research

Action research is a process that promotes preservice teachers' critical reflective thinking. Preservice teachers have opportunities to reflect on their own problems through the cycle of investigating and solving problems themselves by seeking better approaches to instruction. Preservice teachers learn from the process of action research and construct knowledge from their experience. In this section, I review two studies in which preservice teachers engaged in different types of action research projects.

Ostorga and Estrada (2009) believed that a systematic reflection process should be introduced to preservice teachers to promote their critical reflective thinking. In this study, researchers chose an action research structure and designed an assignment that required

preservice teachers to reflect on their practices and seek better approaches in instruction. Preservice teachers selected issues that arose from their practice to analyze for their action research projects. They accessed online modules to learn how to conduct action research through an inquiry process which included a statement of the problem, a literature review, a method (a plan of action), data collection and analysis, conclusions, and a final project. Then, preservice teachers had online discussions guided by initial prompts after each module. Preservice teachers submitted assignments every two weeks to get feedback before submitting their final research paper. Researchers used the work of King and Kitchener (2004) as a framework to analyze preservice teachers' reflective thinking. They coded preservice teachers' final papers, compared them with the statements they made in online discussions and identified the highest level of reflection for each participant. The researchers concluded that most preservice teachers used higher levels of reflection because they selected their own issues in their project and engagement was evidenced through online discussions and their papers. These components were designed to focus students' reflections and allowed preservice teachers to ponder their topics for an extended time, which is important for reflection.

Zangori et al. (2017) explained that a modeling process is a practical reflection routine that can be used with many learning scenarios. Modeling helps preservice teachers picture their thoughts clearly, so they learn to connect their prior knowledge with their instruction during practice teaching experiences. During the modeling process, preservice teachers practice in a cyclic manner as they continually develop, use, evaluate, and revise their models. In the study, preservice teachers were required to develop models of their ideas about the process of teaching and learning science. During a 15-week period of the coursework, they developed their initial model from their prior understanding of the teaching and learning process. At the beginning of

the first week, they described what comes before, during, and after a lesson. Based on their evaluation, the model may be revised to reflect new understandings and ideas. Each step supports preservice teachers in making their thinking and reasoning visible. On the last week, they developed their final models for teaching and learning. Researchers used their initial and final models to explore what knowledge they integrated from their science methods course experiences. It was found that preservice teachers realized that the modeling assignment helped them make sense of their learning and that they valued modeling as a sense-making tool. Because modeling made their thinking visible, it provided preservice teachers the opportunity to differentiate their own knowledge and identify which knowledge was missing and to integrate new ideas from their methods course.

The inquiry, or action research, approaches for supporting preservice teacher reflection prepare preservice teachers to take actions during their reflection. It is different from the guided question approach because during the action research process, preservice teachers have to create their own project that makes them learn from their own experiences. However, teacher educators also support preservice teachers by giving them feedback, which prompts them to reflect more on the project on which they are working.

Collaborative Approaches

Collaborative or cooperative approaches are structures that have been found to support preservice teachers to be more reflective. An outside perspective is helpful in facilitating reflection, so gaining perspectives from other outsiders such as cooperative teachers, mentors, or other teachers broadens preservice teachers' perspectives on their teaching practice. In this section, I review two studies in which preservice teachers engaged in different types of collaborative approaches.

Stevenson and Cain (2013) conducted a study in which they engaged preservice teachers in eight post-observation conferences in their study every two weeks during 16 weeks of teaching practice. Researchers asked questions in the conference such as “How do you think the lesson went?” and continued discussing each issue that preservice teachers would like to talk about and about the development of reflective practices throughout their teacher education program. The researchers took field notes during and after conversations and recorded them to confirm direct quotes and to identify common themes and patterns. They found that preservice teachers agreed that they were supported by cooperative teachers who provided them feedback and helped them develop their lesson planning and reflection skills. Researchers found that preservice teachers think collaborating with mentors is better than writing their reflections or talking to only themselves. It is valuable for preservice teachers to interact with someone about their teaching practice to develop their reflective thinking skills.

Peer observation has been found to support the development of preservice teachers’ reflection skills (Loman et al., 2020). In Loman et al.’s (2020) study on peer coaching to cultivate reflective practice, 40 preservice teachers engaged in peer observation during their field experiences. Preservice teachers were introduced to Schön’s Reflective Practice idea and trained on peer coaching before their field experience. After teacher educators explained and provided some examples, preservice teachers participated in a simulation, role-playing coach and teacher with their coaching partner. Then, dyads learned to give objective feedback by revising observation examples such as an instructional strategy, student engagement, and classroom management. The observer supported the peer’s self-reflection by asking guiding questions. Finally, preservice teachers analyzed the simulations and discussed the feedback received. Teacher educators created a peer coaching form for preservice teachers to document feedback

and reflections. Teacher educators used the form to provide feedback to the coach and the teacher. Preservice teachers were assigned four elementary students (a small group) to observe, plan, teach, and assess. Peer coaches observed and transcribed as many details as they could of their partner's 15-20-minute lesson, which included student comments and behaviors. Preservice teachers conducted the peer cycle twice before discussion and reflection with teacher educators. Teacher educators developed rubrics to analyze peer coaching forms. The rubrics included five aspects of teacher reflection: responding to observations, identifying areas for improvement using specific strategies, developing a plan, analyzing learning, and analyzing instructional behaviors. Teacher educators assigned an appropriate score for each indicator. A random selection of four peer coaching forms were scored collaboratively, which provided calibration for coding subsequent peer coaching forms. Researchers found that preservice teachers provided more objective feedback in all areas during the second cycle. However, preservice teachers do not change their instruction based on what their peers suggested. They believed in evidence that they experience in class that can make them improve their instruction.

Collaborative approaches provided opportunities for preservice teachers to reflect on the conversations that they and their friends shared with each other. Working collaboratively helps preservice teachers see problems in various ways that they might have never thought about when they work alone. Learning occurs when preservice teachers have a dialogic relationship with their peers or supervisors as they share ideas to reflect on their learning.

Three main structures explained in this section: guided questions for reflection, action research, and collaborative approach can be seen combining as in the studies above because one structure can implement another structure and can support preservice teachers to improve their reflective thinking skills. Guided questions for reflection help preservice teachers focus to reflect

on each aspect more specifically. Action research supports preservice teachers to gain experiences and construct their knowledge during the process that they are working on their own projects. Collaborative approaches provide more ideas that they can share with other people.

In my study, student teachers will have opportunities to engage with these three structures to support student teachers to reflect. Guiding questions will be used to help student teachers reflect from various perspectives. Student teachers will have opportunities to reflect on their problems during their student teaching practices and construct knowledge from their experience which is a process of action research. In addition, a collaborative approach will occur because student teachers work with their cooperating teachers and their supervisor during their teaching practices.

Strategies to Support Reflection

There are different strategies that can be used to encourage reflection among preservice teachers. Three main strategies evident in previous studies are written reflection, oral reflection and the use of technology tools such as digital videos, blogs, and social media platforms. Researchers have used various methods to support preservice teachers to develop their reflective thinking skills. It is common for researchers to use more than one strategy (mixed strategies) in their study to learn which strategy is more effective with their students.

Written Reflection

The most common way of exploring students' reflection is through their written reflections. It helps preservice teachers reflect because they can make their ideas more visible and analyze them critically during the writing and editing process (Davis, 2006). Davis analyzed 70 personal teaching journal entries of 25 preservice elementary teachers in a science methods course to characterize the teachers' written reflections. The study illustrated what and how

preservice teachers integrated knowledge and developed their views of teaching. The quantitative data showed the frequency of elements preservice teachers wrote in their reflection and the qualitative data showed how preservice teachers integrated theories into their practice. It was found that written reflection helped students develop their reflective thinking skills. In addition, writing thoughts to paper provides a permanent record, allowing both collaboration and revision. Preservice teachers could go back to visit their written reflections and think about how to integrate theories into practice. The record is also helpful for teacher educators to see preservice teachers' improvement in reflection each time. However, it was difficult for preservice teachers to write all of their actual thinking processes or, all of actual practice. Therefore, written reflection has a limitation in supporting preservice teachers' reflective skills. The implication of the study is that teacher educators were able to plan instruction or design assignments for teaching preservice teachers to reflect in higher levels of reflection. One implication from this study was that teacher educators design assignments to help scaffold preservice teachers to move beyond descriptive writing by analyzing their written reflections and providing them further guidance. As teacher educators read preservice teachers' reflections, it is an opportunity to learn how preservice teachers analyze their own teaching and why preservice teachers see some points matter and how teacher educators can support them.

Oral Reflection

Verbal reflection is an alternative strategy for reflection because preservice teachers cannot only write everything from their experience on paper, but when they have an opportunity to speak, they can provide more information. Also, the interviewers can ask follow-up questions based on a student's answer which will support the student's thinking process (Lambert et al, 2014). Lambert and colleagues (2014) analyzed and compared the written and reflective

interviews of four preservice teachers. Researchers analyzed and coded preservice teachers' written reflections and interview recordings for thematic content. The content analysis showed similarities and differences between the written reflections and the reflective interviews. Researchers found that preservice teachers tended to reflect more when given more open-ended prompts during the interviews with more supporting statements with specific student examples. For written reflections, preservice teachers mostly summarized statements with very little reference to their thoughts or actions. However, the finding indicated that reflection across multiple methods may provide a more complete assessment of student proficiency.

Technology Tools

Technology is another way to engage preservice teachers reflective activities (Whipp, 2003). Whipp studied reflections in the email conversations of preservice teachers. Specifically, he studied two groups of students (23 students in Spring and 17 students in Fall) to investigate what patterns and levels of reflection about field experiences are evident in e-mail discussions and what seems to scaffold higher levels of reflection in these discussions. Whipp identified four elements that support scaffolding preservice teachers in achieving higher levels of reflection; tailored questioning, general questioning, use of critical readings, and threads of online discussions.

Another way to incorporate technology into reflection is using video as a tool for assisting preservice teachers to reflect prior to student teaching. Self-reflection through video is unique because it is visual and provides evidence that allows preservice teachers to examine their teaching experience (Snyder, 2011). In Snyder's study, seventy music education students reflected on their own teaching videos and then discussed issues noticed in their videos. Preservice teachers were guided by their supervisor to write about what concerned them most

and then preservice teachers analyzed each problem using their critical view on themselves. By watching their own videos, preservice teachers identified strengths or weaknesses in their teaching, so that they could improve their instruction techniques. The reflections revealed that three areas need to be improved: reducing the time of teachers' talk, structuring the lesson, and focusing more on students' performance. Findings from this study suggested that video reflection can be a useful tool for improving the instructional effectiveness of preservice teachers.

Twitter can provide preservice teachers opportunities for reflection and collaboration. In a collaborative study with English educators and preservice teachers, Benko et al. (2016) studied how Twitter can be used as a tool to support preservice teachers in their development as reflective practitioners. In this study, English educators integrated Twitter into their methods courses and collected the perspectives of preservice teachers enrolled in teacher preparation courses. Both professors required preservice teachers to create professional accounts and assigned them to tweet, retweet, and reflect on their learning on Twitter. It was found that the Twitter assignment helped the preservice teachers think and rethink about concepts they learned in the methods course and see that critical reflection is not just an individual activity but something that occurs in interactions with others. Preservice teachers learn to participate in a larger teaching community, sharing their own ideas and learning from the resources provided by other teachers. Twitter also supports critical thinking as it limits 140 characters for each tweet (the limit of the character was changed to 280 in 2017). The constraints of Twitter made preservice teachers think carefully and create concise messages that were still powerful for audiences. Preservice teachers understood that reflection is a part of being a lifelong learner and teacher as well as a critical part of high-quality instruction.

Mixed Strategies

As there are various strategies that can be used to support preservice teachers to be more reflective, teacher educators can combine any strategy in the study to instruct preservice teachers to practice this skill. It is possible that written strategies will be used with the integration of technology in any online platform. In addition, oral reflection might be another strategy to support preservice teachers by providing them mentor teachers to help them reflect better by having conversations. For example, Slade et al. (2019) conducted research to determine the impact of reflective practice on teacher candidates. The participants were 243 undergraduate students who were enrolled in multiple sections of a Developmental Sciences and the Context of Poverty course. The number of participants decreased to 186 because some students changed their majors, did not complete the written reflection assignment, or assignments did not follow the required reflection model. Preservice teachers engaged in approximately 22 hours of field-based work with at least one student in a local public-school for composing their case study. They had mentor teachers who worked collaboratively to guide them along the process. Also, they were required to submit a written reflection of the field-based experience electronically according to prompts based on what they found as problems and how they would solve them. Blind copies of students' written reflections were analyzed by three raters for evidence of levels of reflection. It was found that preservice teachers reached different levels of reflection (25% of habitual action, 56% of understanding, 18% of reflection and 1% of critical reflection). Case study made them reflect on a specific student. They realized that they needed to take time to understand students to provide them equitable instruction. Almost 64% of the reflections contained personal experiences or connections to the classroom experience, while 34% of the reflections specifically mentioned course content within the narrative. The results indicate that

reflective practice directly impacts preservice teachers' knowledge, skills, and dispositions related to pre-K-12 education. Although this study used various strategies to support preservice teachers; collaborative approach, written reflection, and technology tool, the result showed that few students reached the high levels of reflection. This highlighted the need for instructional scaffolding to support preservice teachers to make progress in their reflective practice.

This examination of various strategies to support preservice teacher reflection shows that teacher educators assume responsibility for selecting certain strategies for their reflection instruction. Teacher educators can design activities to scaffold or provide opportunities for preservice teachers to practice their reflective skills through various tools. Apart from teacher educators' duty to provide instruction for preservice teachers, it is informative for better understanding from preservice teachers about how much they understand reflection and what kind of assistance teacher educators can help provide them with what they need.

Preservice Teachers' Perceptions

Researchers have studied preservice teachers' perceptions on reflection to see how reflection impacts their thoughts about teaching practices. It is important to understand how preservice teachers interpret the purposes of reflections. There might be a relation between how preservice teachers value reflection and their levels of reflection. If they think reflection is important, they may see benefits of reflecting on what they are teaching, and they can learn from their experiences. In addition, seeing the importance of being a reflective teacher might then be one of their teacher identities and life-long learning skills for their career.

Clark-Gareca's (2005) study provided the voices of three recently graduated TESOL K-12 teacher candidates from the master's program. They were asked to provide retrospective accounts including reflection through video and value of reflection. The three participants had

various perceptions on reflection. One perception was that video recording gave them an interesting and new perspective on themselves as teachers. Watching the recording of the lesson, they gained new insight and developed their practice by self-monitoring during the lesson, and in writing afterward. The participants found that reflecting on the video was an effective way to learn more about instructional practices. However, participants had some negative perceptions on reflection because they thought that if reflection is not an authentic practice or it is an assigned task, it might be made up by the writer to match what readers want to see in an ideal classroom. As a result, preservice teachers indicated that they might need persuasive writing skills rather than reflect based on what happened in the classroom. Participants concluded that reflection is useful if preservice teachers realize the value of reflection and continue reflecting on their teaching throughout their teaching careers. Developing their reflective skills might be life-long professional development for them.

Smith and Lennon (2015) conducted a study to understand preservice teachers' perceptions of the purposes and usefulness of both oral and written reflections and how these written reflections impacted their thoughts about teaching practices. Pre- and post-class responses to written questions, apprenticeship written reflections, and class discussion notes were used to collect data about preservice teachers' perceptions on reflection. Researchers analyzed the written responses, transcripts, and oral reflections. During the first round of coding, In-vivo codes were used to produce conceptual themes. Researchers identified two themes related to preservice teachers' perceptions on reflection. The first theme is "to whom it may concern" in which preservice teachers showed confusion about the audiences and purposes of writing reflection because they do not know who will read their reflections and why they write them. The other theme is "problem solving," when preservice teachers considered reflections as

a method of problem-solving during their apprenticeship experiences. They wrote about problems they were having with classroom management or teaching methods and thought about methods to solve problems. Therefore, preservice teachers focused more on practice than theory in their reflections. Based on the research, the researcher determined that they should practice more on bridging these components for higher levels of reflection. Overall, preservice teachers understood the purpose of reflection as they realized that it was a learning tool for them to look back on themselves and have a conversation with themselves. However, researchers recommended that educators establish clear goals for written reflection assignments and communicate these goals to preservice teachers before they enter the field. In addition, there should be guidelines for both mentors and preservice teachers to work together on practicing to write reflections with purpose.

Silveira et al. (2017) conducted a case study with a music education Master of Arts in Teaching student cohort to detail the development and initial implementation of the process folio (using portfolio for the reflective process) as a means of reflection in preservice music teachers. They gathered data from participant observation, individual and collaborative note taking, written artifacts from students and faculty, audio/video recordings, and semi-structured interviews. All data were coded and analyzed to generate themes. Participants perceived reflection as part of their learning process and growth as preservice educators. Although practicing reflection is challenging, it helps them see how to incorporate new ideas into teaching. Participants understood the value of reflections as they applied reflections from previous classes to make changes in other classes afterward. Moreover, participants suggested that working collaboratively with music education faculty and their peers increased their ability to reflect because they could share ideas, ask questions, and offer alternative ways to solve problems to

one another. However, participants commented on a lack of concrete examples or structure for reflection and that it was confusing and stressful to develop their experience on reflection. It was suggested that it is important to provide a model of well-crafted portfolios.

In summary, preservice teachers have both positive and negative perceptions on reflection. Although preservice teachers acknowledge that reflection is part of their learning process that will be useful for their future teaching, across studies, researchers agree that there should be guidelines for both mentors and preservice teachers to work together on practicing reflective skills.

What should be Provided for Preservice Teachers?

Feedback on levels of reflection helps preservice teachers improve their written reflection (Langeberg, 2019; Thomas & Sondergeld, 2015). Teacher educators can help preservice teachers think about the lesson planning, instruction methods, or classroom management that they can provide in the future teaching. Reflection can be taught and the process for teaching is important for preservice teachers to learn and practice, so it should be guided by teacher educators (Wenzlaff, 1994; Tsang, 2003). Teacher educators can give suggestions or examples to encourage students to think about supporting their claim with more evidence or urge them to think about various solutions for their problems. Also, peer feedback is an alternative way for students to obtain feedback during discussion sessions or collaborative work. The exchange of ideas and viewpoints will broaden preservice teachers' choices to teach from critical commentary, and group learning (Silveira et al, 2017). Without having appropriate pedagogical conversations, along with classroom observations, preservice teachers will lack opportunities to reframe and reflect on what they see and experience (Scherff & Singer, 2012).

Some students want precise instructions, rationales, or templates as a structure or guidance for reflection (Imhof & Picard, 2009). For example, Typology of reflective practice for teacher education was created by Jay and Johnson (2002) because they realized that teaching reflection is complex for teacher educators and students might need structure for thinking about their teaching practice to reflect purposefully. In their typology, they described three types of reflection (descriptive, comparative, and critical) and guiding questions for development of preservice teachers to reflect in various dimensions. Those guiding questions help preservice teachers think thoughtfully about events that they plan to reflect. The first type is a descriptive dimension where reflections are described by setting the problem and explaining it to be understood. The sample questions to guide reflection for this type are “What is happening?”, “Is this working, and for whom?”, or “For whom is it not working?”. The second type is comparative, in which reflections have to be reframed compared to alternative views such as other perspectives or research. The sample questions of this type are “How can I improve what’s not working?” or “If there is a goal, what are some other ways of accomplishing it?”. The final is critical reflection, in which reflections consider the implications of the matter or establish a renewed perspective. The sample questions of this type are “What does this matter reveal about the moral and political dimension of schooling?” or “How does this reflective process inform and renew my perspective?” It was found that a typology helped preservice teachers focus on each level of reflection and reflect more critically on events they encounter. The typology encouraged reflection on multiple dimensions and formed multiple points of view.

Timing is another element that should be considered in integrating reflection in an education program. Reflection should not start at the beginning of the program as students cannot match the ideas to theories from various courses they will learn through the program.

Reflective thinking would work after students have taken various theory courses and have enough teaching experiences and enough time for their ‘stories’ to develop (Bink et al, 2009). Also, developing preservice teachers’ skill in reflection takes time. It needs practice and improvement during the time in the teacher education program with supportive guidance for preservice teachers to be more reflective (Spaulding & Wilson, 2002).

Gaps Found from Literature Review

Hickson (2011) pointed out that research about critical reflection is mostly qualitative and self-reflective in nature. There is a lack of research on the effectiveness of reflection, the outcomes of reflection, and the different methods and processes of reflection. There are few quantitative studies on reflection, most of the studies are qualitative studies about teachers’ experiences on using reflection. It is difficult to confirm that reflection is effective for teaching (Hickson, 2011). However, Liu (2015) argued that reflection is a process of learning, and it is unnecessary to see the result of reflection but throughout the learning process, preservice teachers learn something that can benefit their teaching in the future. It is difficult to gauge the success of using reflection. Therefore, we should be more focused on the learning process than the quantitative result from being reflective teachers. I agree that it is difficult to prove by quantitative data how reflection is effective in preparing preservice teachers in education programs. It might be more useful to understand the phenomenon of how student teachers reflect by collecting qualitative data to gain insights from small groups of participants. Therefore, teacher educators can provide support for student teachers to become reflective practitioners.

In Lambert et al.’s (2014) study, most participants indicated they needed more exposure to reflection. Preservice teachers feel inadequate in learning how to reflect long term rather than reflecting on a single lesson plan. It is beneficial to get critical feedback from experienced

educators when reflecting upon instructional plans throughout the duration of a teacher preparation program. Therefore, it would be useful for preservice teachers to have guidelines for their reflection or learn what to reflect on by following the guidance from teacher educators during different stages in their education program. The guidelines for teacher educators need to be used long-term and open for teacher educators to select various strategies or approaches to use with preservice teachers in different scenarios.

The types of data collection should be varied because researchers can obtain more information from various sources (Meder, et al., 2018; Arikan, 2006). The context and applications of both verbal and written forms of reflection, including that of potential limitations should be considered for using or investigating which forms of reflection work best and under what specific conditions. Although written and oral forms of reflection have been emphasized in educational research, various types of strategies or instructions should also be investigated in terms of their possible benefit for preservice teachers.

Research Questions

The first question for the study on student teacher reflection is (1) How do student teachers reflect on their teaching experiences? This is to understand student teacher reflection process and investigate themes, types, and structures of reflection. I would like to see how student teachers reflect from their reflection assignments.

The second question is (2) How do student teachers perceive reflections as a tool to support their teaching? I will interview student teachers to understand their perceptions on reflection. For example, “How has engaging in reflective thinking and writing supported your planning and teaching activities?”, or “Can you give examples of when you used knowledge

gained from your reflection to make a change?”. The interview focused on the process of reflection that they use during the semester.

The last question is (3) How do student teachers’ perceptions of reflection compare to their reflection practices? This is an analysis from the reflection assignments and the interviews to see the relationship between student teachers’ perceptions of reflection and their reflection practices.

Conclusion

From previous studies, reflective thinking is a skill that can be acquired and developed (Arikan, 2006; Dervent, 2015) and the knowledge obtained from reflective thinking contributes to teachers’ professional development. Participants’ views appeared to show that using reflective thinking strategies helped them learn from their experiences. Loughran (2002) states that, for the sustainability of meaningful reflections, experience cannot help with learning rather reflection on experience is crucial as “Effective reflective practice involves careful consideration of both “seeing” and “action” to enhance the possibilities of learning through experience (p.37)”. Schön (1983) emphasize that reflection transforms experience into learning. Preservice teachers who learn how to reflect will be able to identify their strengths and weaknesses in instructional planning. Dewey (1933) indicated the practice of reflection allows the learner to come to the realization of what is lacking. Participants became increasingly independent as a result of repeating reflective activities and embedding them in their practice. In addition, it is imperative that teacher preparation programs provide a positive learning environment that presents wide-ranging and diverse opportunities to learn, in a culture that values and supports learning ensuring that their preservice teachers will be reflective, more effective teachers by the time they begin their teaching careers (Hatton & Smith, 1995). This is a goal for students to reflect routinely and

realize that it should be one of their teacher's identities that they should keep on working throughout their teaching profession.

CHAPTER III: METHODOLOGY

Introduction

The present study aims to provide a better understanding of the nature of student teachers' reflections and their perceptions about reflection as part of the teaching process during their student teaching semester.

Specifically, the guiding questions are:

1. How do student teachers reflect on their teaching experiences?
2. How do student teachers perceive reflection as a tool to support their teaching?
3. How do student teachers' perceptions of reflection compare to their reflection practices?

The questions were inductive and led to this qualitative design. The research questions were investigated using qualitative methods because a qualitative research design helps researchers understand the meaning people have constructed about their world and their experiences (Merriam, 2009). Qualitative data allows researchers to get beyond initial concepts and generate new understandings. After analyzing the data, findings represent concrete, meaningful, and persuasive qualities to readers (Miles et al., 2020).

I went in with some ideas rooted in the literature and experiences, but I wanted to keep an open mind to new information or ways of thinking about reflection. Therefore, a qualitative investigation was the right fit. Qualitative research is beneficial for a student teachers' reflection study because I can gain deeper understanding of participants' perspectives on reflection. Qualitative research helps the researcher understand complex details of an issue rather than testing a hypothesis (Creswell & Poth, 2018).

For this study, qualitative research provided opportunities to deeply study about student teachers' reflections during their teaching practice. The paradigm that guides this study is interpretivism (Thanh & Thanh, 2015). I believe that individuals are complex, and that different people experience and understand the same issue in different ways. Instead of generalizing from the entire population, researchers with an interpretivism approach obtain a deeper grasp of an event in a particular setting (Creswell, 2007). Therefore, I designed this study to gain in-depth insight and understanding of how each student teacher reflected and perceived reflection. In this chapter, I describe the procedures and methods of analysis I used in this study.

Theoretical Frameworks

In this section, I describe the theories that informed my understanding of reflection. I mainly drew from Dewey (1933) and Schön (1983) to frame reflection in this study. In addition, some researchers, influenced by Dewey and Schön, created typologies for reflection frameworks. I also describe several typologies for reflective writing that influenced my thinking, the design of my study, and my analysis.

A Cycle of Reflection

Reflection frameworks (Hatton & Smith, 1995; Jay & Johnson 2002; Ward & McCotter, 2004) have common process aspects that have their roots in the early reflection proponents and build on the theories of Dewey (1933) and Schön (1983). Reflection in teaching and teacher education typically focuses on reflection situated in practice, as demonstrated by Dewey. In order to reflect on teaching practice, the topics of reflection are drawn from classroom problems. When teachers encounter obstacles in their teaching practice, they begin to reflect on the issue in order to find a solution. The nature of problems that are not easily solved requires a cyclical process which Schön defined as “the tendency to reflect about problems in that practice, and to

‘frame and reframe’ those problems over time” (Ward & McCotter, 2004, p. 245). Many models of reflection (Hatton & Smith, 1995; Jay & Johnson 2002; Ward & McCotter, 2004) have a cyclical aspect because they are based on Dewey’s (1933) idea that issues in teaching cannot be solved easily. Another typical component of reflective practice is looking for alternative perspectives to help solve difficulties. This is another way to look at reflective thinking as a cyclical process because it is the way to consider alternative solutions and test the hypothesis to verify your conjectural idea in order to define or clarify the problem (Dewey, 1933). The practice of reflective thinking encourages you to learn from failure and success, which the study aims to investigate.

Reflection Cycles Based on Problems

John Dewey (1933) created the original conceptualization of the term “reflection”. Reflective practice has its roots in Dewey’s work, even though Dewey himself drew on the teachings of numerous older scholars, including Plato, Aristotle, and Buddha (Houston, 1988). From this more philosophical perspective, reflection is a systematic way of thinking which human beings learn from their experiences. It is a meaning-making process in which learners delve into their experiences with deeper understanding and connect their knowledge with other experiences or ideas from others to improve themselves and their society.

Dewey (1933) defined reflection as the “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (p. 9). This kind of action is beneficial to teachers as it makes them look back on events, think carefully about them, and find a way to improve or change their teaching methods based on their experience, research, or knowledge that they have learned. Dewey proposed that to understand how teachers reflect the researcher needs to look

closely at teachers' reflection processes including how they describe the situation, and question initial understandings and assumptions with an attitude of open-mindedness to see how teachers think the problems out.

Dewey (1933) explained that "Reflection thus implies that something is believed in (or disbelieved in), not on its own direct account, but through something else which stands as witness, evidence, proof, voucher, warrant; that is, as ground of belief" (p.8). According to Dewey, the elements in reflective thinking are a state of hesitation and an act of investigation to confirm a belief. He presented five phases of reflection: suggestion, intellectualization, hypothesis, elaboration, and action.

According to Dewey (1933), he explained the five phases of reflective thought as follows. First, suggestion is the occurrence of a problem, which may begin immediately while speculating on its possible solution, or an unclear dissatisfaction and shock, followed by a determined attempt to discover the cause. The first thought that comes up is a suggestion on what should be done, but when the condition of hesitation appears it inhibits the action. This leads to the occurrence of other ideas and allows more thinking on the issue. Second, intellectualization is to locate or define the problem or difficulty as it will make the job of reflection easier. Once you know where the problem is, you can see the cause and find the way to get to the solution at the same time. The third phase is hypothesis, which is the formation of cautious but adventurous mental habits, as well as the selection and structuring of specific facts that result in perception of a proposal. Good thinking requires the creation of a diverse set of alternative ideas. The fourth phase is elaboration which is the construction of a concept with reasoning. It contributes to the formation of a coherent totality by providing supplementary or intermediate parts that connect different extremes. The final phase is action which is a decisive phase because we have to take

action to verify the conjectural idea. The five phases do not follow in any particular order as each of them forms, promotes, leads, or changes to new observations, hypothesis, or actions that helps the person who thinks in this cyclical process learn from their thinking cycle.

These ideas formed my thinking about reflection and guided me to structure reflection prompts based on students' problems or difficulty during their teaching practice. It is important that student teachers learn from their experience and one way to help them learn is to give them time and space to reflect on their experiences. When they have time to look back on what they have done in classrooms, they may see themselves from another perspective and might make connections between their knowledge and their practice. Reflection might help them to improve their teaching practice.

Reflection for Actions

Reflection has been integrated into teacher education widely by the work of Schön (1983). He considered reflective practice as a way to develop professional thinking skills and argued that, by connecting thought and action, students may overcome the challenges. He used two terms to identify the process of engaging in reflection: reflection-on-action (after the event) and reflection-in-action (during an event). Both types of reflections require challenging moral and intellectual processes to arrive at informed decisions regarding the best action to take. While reflection-on-action involves reflecting on action sometime after it has occurred, reflection-in-action requires simultaneously reflecting and acting, suggesting that the professional has advanced to a level of proficiency where they can consciously consider what is happening and modify actions almost instantly. Student teachers need a lot of practice reflecting-on-action to get to a place where they can reflect-in-action. The idea about action is practical for teacher candidates because they will understand that reflection is not only thinking in their heads, but

also taking actions for developing their teaching practice. In addition, by taking action, teacher candidates have opportunities to experience how reflection helps them in teaching themselves.

Schön (1987) believed that “We frame difficult circumstances in many ways depending on our disciplinary backgrounds, organizational responsibilities, past histories, hobbies, and political/economic perspectives” (p.4). Therefore, we set or frame the problem in our own ways and come up with the solutions differently. According to Schön (1983), reflection and practice are intertwined because teachers and other professionals behave and understand their situations in ways that cannot be entirely captured by educational theory or reduced to norms. Reflection is more than just a list of thoughts; it also entails a result—a sequential arrangement in which one notion dictates the next as its proper conclusion while drawing on its predecessors. The subsequent parts of the reflective thought do not flow into and out of one another like a medley; rather, they grow out of and support one another. Accordingly, thinking is defined for the purposes of this inquiry as the operation in which current facts imply future facts (or truths) in such a way as to encourage belief in the latter on the basis of the former (Schön, 1983).

Dewey proposed that without reflecting on experiences, we cannot form knowledge. Schön, expanding on Dewey’s theory, introduced that in reflecting, action is important. It is not only thinking in one’s head, but we need to take actions. Dewey informed us that reflection is important to form knowledge, and Schön emphasized action as an outcome of reflection. Both Dewey and Schön introduced the idea of reflection to help solve problems that might occur in the classroom. As teachers investigate ways to improve their teaching, they might consider that reflection on their own teaching experience can help them in developing their teaching practice. Therefore, Dewey and Schön’s idea of reflection for action introduced me to investigating how

student teachers should reflect in different perspectives of reflection which might lead to reflection for action.

Typologies for Reflection Frameworks

According to Dewey and Schön's cyclical process of reflection, many researchers developed typologies for reflective writing including Jay and Johnson (2002) and Ward and McCotter (2004). Jay and Johnson (2002) believe that a typology of reflective practice guides teacher educators in teaching reflection to preservice teachers. They realized that the complexity of reflection makes it difficult to teach. They responded to this by developing a typology for teaching reflection. Teacher educators can use types of reflection as a guide for student teachers to reflect in different perspectives or even preservice teachers can use it themselves to learn various types of reflections and learn to reflect in different ways. Jay and Johnson's typology profiles three dimensions of reflective thoughts: descriptive, comparative, and critical. Although Jay and Johnson proposed the understanding that reflection is not something that can be provided in a set of techniques for teachers to use, they believed that teachers could provide supportive scaffolding for students to learn how to reflect.

The first dimension of this typology is "descriptive reflection" which Schön (1983) called "setting the problem". Uncertain or puzzling situations will determine what the individual is trying to deal with and understand. The second dimension is "comparative reflection" or what Schön (1983) called "frame experiment." Dewey (1933) explained that this happens when one "reframe the problem." It is thinking that involves different frames or perspectives to gain insights of the situations. The third dimension is "critical reflection" which is the result of a careful thought process through multiple perspectives. Schön (1983) explained it as the ability to find new meaning in the situation.

Ward and McCotter (2004) developed a rubric that illuminates the dimensions and qualities of reflective writing. They believe that reflecting from multiple perspectives might improve the quality of teacher reflection. There are four levels of their reflection rubrics which are routine, technical, dialogic, and transformative. The first three terms are traditionally used by Schön (1983), and the fourth term has been renamed to transformative but included traditionally critical issues. Routine is a writing that does not question the situation or desire to be responsible for any change. Technical is a reflection that is used to solve the problem but there is no insight gained from this reflection. Dialogic is a process of discussing and considering different views of others. Transformative reflection is a deeper consideration of fundamental assumptions that leads to change of practice.

Typologies from these two studies (Jay and Johnson, 2002; Ward and McCotter, 2004) helped me to consider the various ways preservice teachers can engage in reflection. These typologies were used to organize and analyze data in this study, as I will explain later in this chapter.

Researcher Positionality

As proposed in these theoretical perspectives, reflection plays an important role in teacher preparation as it is the foundation of teacher education (Dewey, 1938; Manen, 1977; Schön, 1938). Although I have heard about the benefits of reflection for teaching and learning since I was a student, it was not until my doctoral program that I experienced and understood exactly how reflection helps one become a reflective practitioner. Providing my socio-demographic information in this section will show how I am shaped to see the world and interpret data. I am a 32-year-old Thai female. My first language is Thai and I learned English as a foreign language early at school as it was introduced in a curriculum from kindergarten.

Reflection was not introduced in schools as much as mindfulness and meditation which I learned about beginning when I was six years old. Thai students have been taught since elementary school that meditation is a practice for having more concentration on studying which is influenced by Buddhism practice. In my culture, contemplative practice helps students to become more focused in the classroom on what they are reading or discussing (Zinger, 2008). In my primary school, teachers asked students to sit silently for meditation for about ten minutes before the lesson. It was a process that brought students' interest from any distractions back into the classroom to be ready to learn. At that time, I did not understand the point of the activity very much.

I was surprised that in one of my doctoral classrooms in the US, I was asked to sit silently before the lessons for 15 minutes. At the end of the semester, I realized how meditation and reflection are related. Both of them created a space for me to disengage from a busy life and come back to investigate my life at that moment. Similarly, Zinger (2008) posits that, "When students emerge from a moment of silence, they have a more profound sense of tolerance and understanding and are able to express their thoughts more coherently" (p. 27). It is a time set for reflection on what I am doing. I can focus on my role as a student and as a teacher by connecting what I am learning from theories and how I can apply my learning in teaching practice. In my experience, contemplative meditation is an effective approach to discovering hidden concepts in one's mind, to acquire insight, and to learn about oneself, it aids in deep thinking and self-reflection. (Harrison, 2017). This reflection time made me ask questions to myself about my practice and how I can improve my teaching to help students' learning. I believe reflection is essential to quality teaching and it would be a tool for students to also reflect and see its value to

their teaching. In addition, how I see reflection as an available tool for teachers impacts my perspective as a researcher.

My experiences with meditation and reflection informed this study as I have found both to be good routines for reflective thinking in my daily life to have some time for myself to think about my own practice. As I see the value of reflection and understand that it is most effective to practice doing it regularly, anecdotally, it may or may not be similar to student teachers' reflections and their perceptions on reflection. After student teachers practice reflection for a semester, they might be able to see the benefits of reflection as I have experienced it myself. This experience creates a lens through which I am analyzing data. I have internalized what reflection and meditation should entail to improve practice. However, I stayed aware of this as I analyzed the reflections of a group of students that did not grow up with the same socialization related to meditation and reflection and that they are also from a different generation.

Research Methods

In this section, I describe the context and participants, data collection, and data analysis of the study.

Context and Participants

The participants in this study were preservice teachers enrolled in a student teaching course in the School of Teaching and Learning at Illinois State University. Illinois State University is a public institution in the Midwest that is well-known for its teacher education programs. Preservice teachers have multiple opportunities for student teaching. They can choose to complete a 16-week student teaching placement in Illinois or San Antonio, Texas. They can choose a yearlong experience in a professional development school (PDS), or they can choose a dual placement of approximately eight weeks in an Illinois school combined with an eight-week

student teaching placement in Eastbourne, England or Alcala, Spain. During student teaching, student teachers steadily increase their classroom responsibilities while demonstrating skill in planning, evaluation, instruction, and other professional tasks.

During the spring semester of 2022, there were 367 student teachers across all programs within a large teacher education program located in the Midwest who applied to student teach. All student teachers were invited to participate in the study. The number of student teachers in Early Childhood, Elementary, and Middle Level Education majors were 71, 257, and 39, respectively. The program coordinator sent an email to recruit students to participate in the study before the semester started. In addition, she sent another reminder email after the initial recruiting effort. It was stated in the emails that students who chose to participate in the study would have opportunities to reflect on their teaching experience which would benefit their teaching practice and that participation in the study is voluntary. Two student teachers majoring in elementary education agreed to participate in the study. By signing the consent form, they agreed to submit their weekly written reflection and participate in an interview at the end of the semester. I assigned participant numbers for the first two participants as P1 and P2. As the number of students participating was not enough for the study, the program coordinator suggested that I connect with an instructor to recruit student teachers enrolled in an early childhood student teaching experience, a course early childhood preservice teachers take in conjunction with student teaching. I met with the instructor of this course to explain the study and asked for support. The instructor agreed and sent the recruiting email to the 50 students enrolled in her course. Thirteen student teachers from the course consented to participate in the study. I assigned participant numbers for the 13 participants as P3 to P15. All 13 student teachers

agreed to share their reflections and four of them agreed to be contacted at the end of the semester for an interview.

Students in this course were required to submit reflections every other week and compose a final cumulative reflection at the end of the semester. Their reflections could be written, or video recorded and submitted to the course instructor via platforms that they wanted to share with the instructor such as a word document, a video via Flipgrid, or a video recording. I created a folder in Microsoft OneDrive for the course instructor to share with me students' reflections. Every other week the course instructor uploaded students' reflections to the folder for me to access. At the end of the semester, I emailed the four students who agreed to be interviewed to set a date and time for the interview. There were two student teachers who replied to schedule the interview. I sent another email to remind the other two student teachers to schedule the interview, but they did not reply. The total number of the participation of this study is 15 student teachers (Two elementary majors and 13 early childhood majors). The total number of student teachers who were interviewed is four (Two elementary majors and two early childhood majors). The codes that I assigned for the participant 1-15 were P1-P15, reflection number 1-10 were R1-R10.

Data Collection

All data were collected during the Spring 2022 semester. Data sources included weekly/every other week written and oral reflections from all 15 participants and semi-structured interviews (Spradley, 1979) with four participants who agreed to be interviewed at the end of the semester.

Written and Oral Reflection Assignments

For the first two participants (P1 and P2) from the initial recruitment efforts, I collected written reflections weekly. I provided different guiding questions each week for them to reflect on (see Appendix A). I used the idea of different types of reflection from my theoretical perspectives to craft guiding questions. For example, the question “What did you experience in teaching this week?” was intended to guide students to reflect on their teaching experience in a descriptive way. The guiding question “What did you connect from teaching theories to your teaching practice?” helped elicit comparative reflection from students. The guiding question “Describe a moment when you needed to make an unexpected decision in class? What did you do?” encouraged student teachers to write a transformative reflection. The order of the questions was organized based on the typology of reflections (Jay & Johnson, 2002; Ward & McCotter, 2004). The guiding questions were intended to help student teachers extend their ideas about reflection and learn more about themselves while considering different aspects of their teaching. Each question was designed to be open for students to write about any issue that they thought was important for their own learning. Student teachers were required to give examples of the situation that they were writing about. Reflection assignments were submitted weekly from January 31 to April 17, 2022. I created a folder in Microsoft OneDrive for each student and shared it with them. Participant numbers one and two (P1 and P2) were assigned to student teachers instead of using student teachers’ names. Student teachers wrote their reflection each week based on a guiding question and submitted it by saving it in the shared folder.

For the other 13 student teachers (Participant 3 - Participant 15 or P3 - P15) recruited from an early childhood course, I collected one to two pages of written reflection or a 10-minute oral reflection video every other week. The course instructor uploaded students’ written and

video reflections from January 17 to May 2 in a shared folder that I created. The course instructor provided students with the same prompt throughout the semester:

Each journal entry should include at least one thing you learned; at least one thing you want to carry into your teaching practice in the future (can be the same as what you learned); at least one challenge you overcame; and at least one question that was raised for you about teaching.

For their final reflection, teacher candidates responded to a different prompt provided by the professor which was “Reflect on your student teaching experience. Discuss the highs/lows, unexpected discoveries, things you wish you could have done differently, etc.” I collected a total of ten reflections from participants one and two and a total of eight reflections from participants three through 15 (Participant three submitted nine reflections and participant five did not submit one reflection). There were 7-10 reflections from 15 student teachers. The total number of reflections was 124 (see table 1).

Table 1

Number and Mode of Reflections

Participants	Oral	Written	Total
P1	0	10	10
P2	0	10	10
P3	9	0	9
P4	6	2	8
P5	0	7	7
P6	8	0	8
P7	7	1	8
P8	0	8	8

P9	0	8	8
P10	0	8	8
P11	3	5	8
P12	8	0	8
P13	0	8	8
P14	2	6	8
P15	8	0	8
Total Reflections	51	73	124

Semi-Structured Interviews

The semi-structured interviews (Spradley, 1979) were conducted at the end of the semester following the analysis of written reflections to gain additional information about participants' experiences with reflection in their teacher education programs and their perceptions of reflection as a tool to inform their teaching. The semi-structured interviews allowed me to have some interview questions prepared and let me produce follow-up questions during the interview. I prepared interview questions that helped me gain student teachers' perceptions on reflection. In addition, I asked more questions about what student teachers brought up in their conversations to expand their ideas and obtain more insightful information (Spradley, 1979). I did not use a structured interview because different student teachers had different stories and a semi-structured interview allowed me to ask different questions to different student teachers. In addition, I did not use an unstructured interview because I had a direction and goal that I wanted to gain on student teachers' perception on reflection.

The four student teachers (two students from the initial recruit and two students from an early childhood course) who agreed to be interviewed at the end of the semester chose the date

and time that they were available to meet on Zoom during the last three weeks of the semester (April 18 - May 4, 2022) after they submitted all their written and oral reflections. Each interview lasted approximately 30 - 45 minutes, and all of them were recorded and transcribed for analysis.

There were two parts to each interview. The first part of the interview was conducted by asking student teachers some prepared interview questions (see Appendix B) and follow up questions to gain more insights into their perceptions on reflection. The second part of the interview was a discussion based on each participant's written and oral reflections. I selected excerpts from their written and oral reflections to discuss during interviews. I read the excerpts to student teachers, and I invited them to talk more about the experience they reflected on. I asked student teachers some questions to understand their perceptions of reflecting. For example, I selected this excerpt from participant one to discuss more on the topic of confidence:

I am still developing my “teacher confidence” and I know that in time I will feel more comfortable while I am teaching a room full of students. I don't think there are any specific classes that can teach student teachers how to handle a variety of scenarios within a classroom, because the list is long and always changing!

From the excerpt, the student teacher had an opportunity to talk about how reflecting on this issue helped her develop confidence. The purpose of this meta-reflection was to encourage student teachers to think back on their use of reflection during their teaching practice. The interview data provided a different lens and perspective.

Data Analysis

I conducted data analysis in three phases to answer the three research questions that guided the study (see Appendix C).

Phase 1: Inductive and Deductive Coding of Written and Oral Reflections

To answer the first research question: How do student teachers reflect on their teaching experiences? I conducted both inductive and deductive coding on written and oral reflections. I used both inductive and deductive coding. The inductive approach helped me develop theory from data and the deductive approach helped me apply the theoretical frameworks and information I got from inductive coding to gain more perspectives on the data.

Inductive Coding. I began with open coding of all reflections. Written reflections were coded week-by-week as they were submitted. Oral reflections were transcribed for coding. At the beginning of the data analysis, I read through each student teacher's reflection assignment. I did an open coding to see patterns and themes from student teachers' reflections (see table 2). Participant codes were assigned by participant number and reflection number. Participants 1-15 were coded as P1-P15 and Reflections 1-10 were coded as R1-R10. For example, P1R1 means Participant 1 Reflection 1. With open coding, I broke the data into discrete parts and created "codes" to label them so I could compare similar events in the data (Corbin & Strauss, 1990). Then, I did axial coding to relate data together to reveal categories and sub-categories (see table 3). I created an Excel sheet to manage data coding. I accumulated the data until I finished analyzing all data at the end of the semester. I sorted through all analysis codes, grouping data into categories to identify themes. I identified five themes and 15 sub-themes from student teachers' reflections on their teaching practices.

Table 2*Written and Oral Reflection Open Coding Samples*

Participant code	Analysis code	Data
P1R3	Behavior management	With a classroom of 26 students, I must consider students behavior every minute that I teach. Some students have the capacity to self-regulate their behavior and others are still developing those skills
P11R6	Assessment	This week there was a formative assessment after each lesson in all subjects. We did a combination of turn and talks, verbal responses, written responses and exit slips. The formative assessments helped me to reflect on my teaching as well as the

Table 3*Written and Oral Reflection Axial Coding Samples*

Category	Code	Data
Instruction	Teaching	I spent several hours sorting through the documents and brainstormed ways to engage my students at the start of the unit. World War II is a large unit and will take about 2 months to complete. I hope to keep my students interested and I have multiple activities tentatively planned that involve infusing technology into the lesson plans (videos, podcasts, Jamboards, Flipgrids) along with simulations (Stock Market crash), research (Assign a person who survived the Holocaust, and the student will conduct research and report their findings), small group, whole group, etc. (P1R2)

Planning	I spent several hours sorting through the documents and brainstormed ways to engage my students at the start of the unit. World War II is a large unit and will take about 2 months to complete. I hope to keep my students interested and I have multiple activities tentatively planned that involve infusing technology into the lesson plans (videos, podcasts, Jamboards, Flipgrids) along with simulations (Stock Market crash), research (Assign a person who survived the Holocaust, and the student will conduct research and report their findings), small group, whole group, etc. (P1R2)
Assessment	I gave a short math assessment over several lessons to gauge students' understanding. I started by giving them the instructions and had the students work independently. After grading, the low scores were disappointing. I realized what I could have done differently and decided to throw away the assessment and start again. From that experience, I learned that I do not have to be tied to my lesson plan and it is more important that students are learning and not simply being graded. (P14R4)

Deductive Coding. A priori coding is an approach in which a researcher begins with an a priori or “starting” list of codes developed based on what preliminary investigation suggests might exist in the data (Miles et al., 2020). Miles et al. (2020) suggested that “this method is appropriate for qualitative studies that build on or corroborate previous research and investigations” (p. 69). Using a priori codes is a means of developing codes for field work based on a literature review, conceptual framework, or key variables that the researcher brings to the study (Miles et al., 2020).

First, the a priori codes that I used to analyze student teachers' reflections were based on my modification of Jay and Johnson's (2002) types of reflection. Although Jay and Johnson created the typology as a guideline for student teachers to follow, they also recommended that researchers use it for further study with an aim to understand how student teachers reflect and how they use reflection as a part of teaching. Therefore, I used a modified version of it as a tool

to analyze student teachers' reflections. Jay and Johnson presented three types of reflection which are descriptive, comparative, and critical reflection. However, there are four types of reflective writing for this research (see table 4). When I started to analyze the first couple reflections, I found that some of student teachers' reflections did not fit in three types of reflection that I had because most of their reflection were written in a summary way. Student teachers wrote about general situations and wrote little or no context in their reflections. Therefore, I added one more type of writing to my rubrics for analyzing student teachers' reflection assignment. The type that I added was "summary". As Jay and Johnson provided this typology for students to follow and aimed to introduce them to various types of reflection, they did not include summary as a type of reflection because they expected students to reflect in different ways more than write a summary. For the other three types of reflection, I used the terms "descriptive" and "comparative", but I changed the term "critical" to "transformative" reflection. Although the explanations of both terms are similar in both studies, transformative reflection was the term used by Ward and McCotter (2004) because they intended to emphasize the action that teachers take after they reflect critically. The term "Transformative" makes it clear that this type of reflection will lead to a change of practices or perceptions.

Table 4

Types and Characteristics of Reflective Writing/ Coding Criteria

Types	Characteristics/Coding Criteria
Summary	<ul style="list-style-type: none"> • writes about general situations happening • writes little or no context, personal experience, or response • writes about how one teaches but not focus on students' learning • refers to little or no learning/educational theories

Example “*each morning during our morning meeting in class, we take the time to mention something good happen between the day we left school and when we got back to school that morning and umm each child had opportunities to share something good that happened to them and a lot of them share more than one thing which is okay.*” (P7R4)

Descriptive

- identifies a problem
- states the means to solve the problem
- refers to specific learning/educational theories relating to situations
- writes limited context

Example “*One challenge that I overcame in these last two weeks has been how I handle my anger and frustration in the classroom. This year, there are three students in my class with very strong behaviors. They are to the point where that are constantly throwing things, hitting other students, yelling, etc. I have had to learn to take a step back and learn to respond to their actions not react.*” (P5R4)

Comparative

- writes about different perspectives
- writes about alternative solutions
- writes enough specific context
- writes reasons/ evidence for selecting specific methods.

Example “*One thing I want to carry into my practice in my future is some of their great classroom management tools and things that I read from my peers in the discussions. I heard a lot about like reward systems in a way and how the students are involved in making the classroom rules, and I think that’s a great idea. I’m not too keen on reward systems like you do something and you get a prize. But I do like the fact that. Students have a goal to work towards.*” (P15R2)

Transformative

- writes about personal involvement
 - writes about concern on how moral, historical, political, or cultural aspects impact learning
 - writes about change of practice/ perception
-

- writes about how they evaluate solutions from current evidence that is most reasonable

Example “one thing that I learned from this week is that it’s important to find the balance when possible between a straight curriculum and other topics teachers feel that students might need that might not specifically built into the curriculum. We have learned in my time at ISU that students are always at different levels and have different interests and strengths. Sometimes curriculum does not accommodate for different students and teachers need to fit in their own activities or differentiations to fit their student needs. This is something that I found really important in the classroom in order to help all students grow and learn together. And not allow students ability levels or their weaknesses be a barrier for their overall learning. This is something that I want to carry in my classroom because I do not want to leave a student behind or have them feel like they are less than or a lot of time I know kids would say that they are not smart enough or they are bad at something just simply because they haven’t been given a tool to flourish in that area cause we all have weaknesses, and we all have strengths. We are all different. So what’s that being said I feel as if I do not have resources or knowledge to help students I will make sure to find someone who can help those students or teachers will not and do not know everything that’s okay we are continuing to grow and learn about ourselves, our students and the educational field overall every day.” (P11R2)

Summary. Students write in a narrative way about their teaching experience, they do not reflect but only report events (Hatton & Smith, 1995). Students write about what happens during their teaching practice in general without specific details or examples. Ward and McCotter (2004) used the term “routine” to label this type of writing. This happens when student teachers cannot identify a problem in their teaching practice. Questions about needed personal change are not asked or implied; often not acknowledging problems or blaming problems on others or limited time and resources. Critical questions and analysis are limited to the critique of others.

Analysis tends to be definitive and generalized (Ward & McCotter, 2004). Kember et al. (2008) explained this type of writing as a non-reflective writing which are supporting material parts such as an introduction, a description of the setting or a recall of an experience before student teachers further start with an examination of relevant theory or a reflection on personal insights gained.

In this study, I used the term “summary” for this type of writing because this type of writing is detected when students recounted what happened during their teaching practice and they lack elements required to meet with other types of reflection.

Descriptive reflection. Descriptive reflection is a term used by Jay and Johnson (2002). However, it has the same characteristics as technical reflection which means how one responds to specific situations based on a given research or theory base to obtain certain objectives (Manen, 1977; Hatton & Smith, 1995; Valli, 1997; Ward & McCotter, 2004). King and Kitchener (2004) introduced the same type of reflection but used a different term which is pre-reflective thinking.

In this study, I define descriptive reflection as the process of ‘setting the problem;’ that is, determining what it is that will become the matter for reflection (Jay & Johnson, 2002). Schön (1983) defined that “problem is used to encompass any puzzling or troubling or interesting phenomenon with which the individual is trying to deal” (p. 50). Student teachers are concerned with means rather than ends, set of principles, theories, and technical practical recommendations which seem appropriate to the practical (Manen, 1977). They try to find a solution for a specific problem by trying to match or connect it with theories and might select some way to solve the problem based on external guidelines without intending to change perspective (Ward & McCotter, 2004).

Comparative reflection. Comparative reflection is a term used by Jay and Johnson (2002). However, some researchers used different terms such as dialogic (Hatton & Smith, 1995; Ward & McCotter, 2004), practical (Manen, 1977), deliberative (Valli, 1997; Spalding & Wilson, 2002), or quasi-reflective thinking (King & Kitchener, 2004). This type of reflection is a process of analyzing a certain situation by considering others' perspectives or sources of information.

Comparative reflection is the process of thinking about the matter for reflection from a number of different frames or perspectives for different interpretations (Jay & Johnson, 2002). Student teachers compare their solutions with alternative ways or different perspectives, values, experiences, or beliefs to explore alternative solutions (Valli, 1997). They apply theories to practice based on specific context. Student teachers question the use of methods or predict results that might happen, and beliefs are justified by giving reasons and using evidence (King & Kitchener, 2004). They might talk to friends, mentor teachers, supervisors to gain various ideas to compare on one issue.

Transformative reflection. Transformative reflection is a term used by Ward and McCotter (2004). It was described by different researchers in different terms such as critical reflection (Manen, 1977; Hatton & Smith, 1995; Valli, 1997; Spalding & Wilson, 2002; Jay & Johnson, 2002) or reflective thinking (King & Kitchener, 2004). The idea of this type of reflection focuses on personal involvement and change of practice or perceptions.

Transformative reflection is the process of focusing on personal involvement with fundamental pedagogical, ethical, moral, cultural, or historical concerns and how these impact students and others leading to fundamental change of practice (Ward & McCotter, 2004). Critical reflection involves taking in the broader historical, socio-political, and moral context of

schooling (Valli 1990). The adequacy of those solutions is evaluated in terms of what is most reasonable or probable according to the current evidence, and it is reevaluated when relevant new evidence, perspectives, or tools of inquiry become available (King & Kitchener, 2004).

After I finished the analysis of student teachers' reflection types, I found that student teachers use different types of reflections. However, the way I analyzed was a holistic approach for the entire reflection which I found was not informative enough. Therefore, I decided to use a priori codes again by combining reflection themes that I got from the open coding (five themes and 3 sub-themes for each theme) with the four types of reflection. As a result, there are 60 a priori codes to categorize student teachers' written and oral reflections (see table 5).

Table 5

A Priori Codes Table

Types/ Themes	Theme 1			Theme 2			Theme 3			Theme 4			Theme 5			Total
	Sub1	Sub2	Sub3	Sub1	Sub 2	Sub 3	Sub 1	Sub 2	Sub 3	Sub 1	Sub 2	Sub 3	Sub 1	Sub 2	Sub 3	
Type 1																
Type 2																
Type 3																
Type 4																
Total																

When I categorized a unit of reflective writing as a certain type, I also considered the theme and sub-theme of that chunk of data before putting it into the table. By analyzing the data this way, I gained more information about how student teachers used different types of reflection to report different themes and then noticed the structures of how each student teacher reflected on their teaching practices. The structure of reflection is the combination of types and themes

that student teachers reported on a single reflection. For example, student teachers wrote about one theme on their reflection by using multiple types of reflection.

From this open coding and a priori coding of written and oral reflections, I answered research question one by reporting how student teachers reflect (see chapter 4). The findings informed student teacher reflection structures from the analysis of reflection's types, themes, and sub-themes.

Phase 2: Open Coding of Interviews

To answer the second research question: How do student teachers perceive reflections as a tool to support their teaching? I conducted an open coding (Corbin & Strauss, 1990) of four student teachers' semi-structured interviews to see their perceptions on reflection.

The four interviews from video recordings were transcribed for coding. The open coding allowed me to see patterns and themes related to student teachers' perceptions on reflection. With open coding, I broke the data into discrete parts and created "codes" to label them so I could compare similar events in the data (Corbin & Strauss, 1990). Then, I did axial coding to relate data together to reveal categories and sub-categories. I created an Excel spreadsheet to manage data coding (see table 6). I sorted through all analysis codes, grouping data into categories to identify themes. I found two main themes and five sub-themes for perceptions on reflection (see chapter 4).

In reviewing the data from phase one and the table on themes and sub-themes that I gained from student teachers' written and oral reflections, I found that there was a sub-theme "learn from reflection" under the theme "learning experience." In reviewing the data in this sub-theme, I concluded that this data gave me access to student teachers' perceptions on reflection. Therefore, I added this data to my open coding of interviews. I found two main themes and five

sub-themes for perceptions on reflection. The combination of student teachers' perception reflection from semi-structure interviews and written and oral reflections provided student teachers' perceptions on reflection to answer research question two.

Table 6

Interview Open Coding Samples

Participant code	Analysis code	Data
P2	change	I think that through reflective thinking I was able to really implement my own classroom in behavioral management kind of because I believe I didn't have any at the beginning of the semester, and I think I've come a long way.
P9	look back	I think that when you're writing the reflections it gives you a chance to think.

Phase 3: Comparison between Written and Oral Reflections and Perceptions

To answer the third research question: How do student teachers' perceptions of reflection compare to their reflection practices? I relied on data from the four student teachers who participated in the interviews because they provided both written reflection and interview data. As I created the table for each student teacher's types, themes, sub-themes and structures of their reflections in phase one, I used that information to compare with data from phase two (perceptions from interviews and written and oral reflections on how they perceive reflection). I compared the data across the four participants to see if there was any relationship between student teachers' perceptions on reflection and their reflective practices.

From the comparison between four student teachers' written and oral reflections and perceptions, I did not find a clear pattern for a relationship. I can answer research question three by reporting on four student teachers as individual cases, as they have their own uniqueness in their reflections and perceptions on reflection.

Trustworthiness

Trustworthiness is important for a qualitative study because it helps to build trust in a researcher's findings from specific persons' stories or experiences. Qualitative methodologists have made several attempts to define how trust in qualitative findings might be communicated (Stahl & King, 2020). In this study, the methods I used to provide trustworthiness were triangulation, peer debriefing, and reflexive journals.

Triangulation

According to Flick (2018), triangulation occurs when researchers take different perspectives on an issue under investigation or, more broadly, in answering research questions. These points of view can be supported by a variety of methods and/or theoretical approaches. In order to establish credibility of the study, triangulation among various data sources such as written and oral reflection assignments and interviews were analyzed to have a wider range of evidence to support findings. Triangulation can be achieved within a qualitative inquiry strategy by combining various qualitative methods (Patton, 1999). In this study, I analyzed different datasets to compare the findings to validate each other and see if they lead to the same conclusions. This allowed for a more in-depth analysis of student reflection that goes beyond examining just one type of data or using only one type of analysis strategy.

Peer Debriefing

To improve the validity of the study, peer debriefing involves talking to one or more peers who provide reactions and feedback that can help researchers shape practice and interpretations (Stahl & King, 2020). I met with my advisor weekly to discuss various issues during the study such as participants, analysis procedures, and findings (see reflecting with my advisor section in chapter 5).

Reflexive Journal

Maintaining a reflexive journal is a way to perform a running check on the biases a researcher might carry with them into the context (Lincoln & Guba, 1985). During the process of collecting and analyzing student teachers' reflections, I, as a researcher, reflected on the process during the study. I reflected on the methods I used to collect and analyze the data. It helped me understand how I selected each process or what should be revised. As I interpreted the data based on my positionality and my personal experience, I needed to reflect on my position throughout the study to understand myself and how I related it to the data I analyzed. I also reflected on the weekly meeting with my advisor as I changed some methodology during the process of analyzing the data to make the most use of the data that I obtained (see this section in chapter 5).

Ethical Treatment of Human Subjects

After the dissertation committee approved the proposal, an application for ethical review was submitted to the Institutional Review Board (IRB) for the Protection of Human Subjects at Illinois State University. The request for application complied with the requirements and guidelines set forth by the IRB. The participant consent forms are provided in Appendix D and Appendix E.

Summary

In this chapter, I presented my methodology, including theoretical frameworks, research positionality, research methods, trustworthiness, and ethical treatment of human subjects.

Research methods included context and participants, data collection, and data analysis in order to understand how student teachers reflect on their teaching and how they perceived reflection as a tool to improve their teaching practice. Trustworthiness enhanced credibility including triangulation, peer debriefing and reflexive journal.

CHAPTER IV: FINDINGS

The purpose of this study was to explore student teachers' reflections on their instruction and their perceptions about reflection as part of the teaching process. The specific research questions that guided the study were:

1. How do student teachers reflect on their teaching experiences?
2. How do student teachers perceive reflections as a tool to support their teaching?
3. How do student teachers' perceptions of reflection compare to their reflection practices?

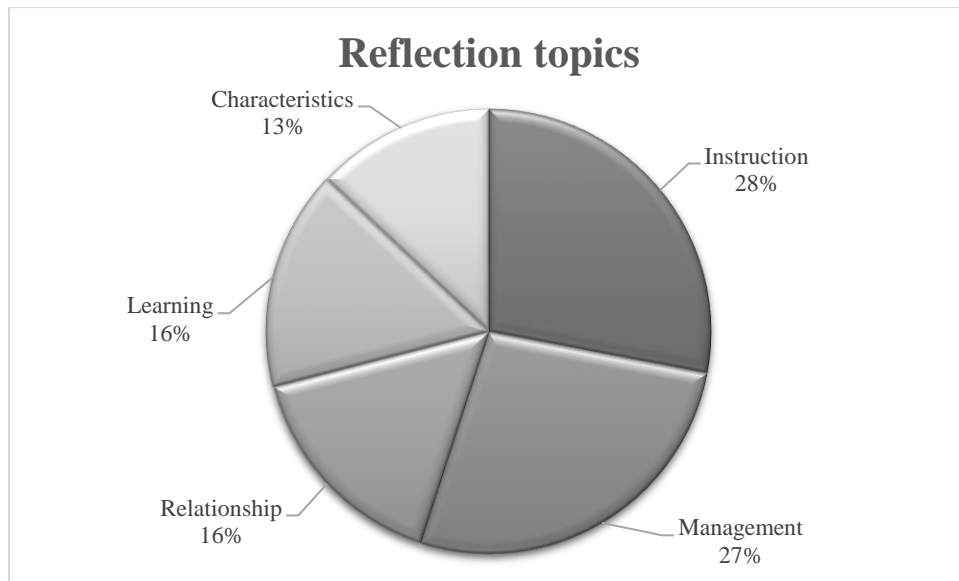
Reflection Topics

To answer the first research question, I analyzed 124 one-two-page reflections from 15 student teachers. The student teacher participants submitted a written and oral reflection each week (2 participants), or every other week (13 participants), resulting in a range of 7-10-reflections per participant.

I conducted open coding of all reflection data to identify themes in what student teachers reflected on during their student teaching semester. I identified five themes that were prevalent in the data set: instruction, management, relationships, learning experience, characteristics of a teacher (see figure 1). The other category, which is not represented on the pie chart, consisted of data that didn't fit one of the five prevalent themes or constitute a sixth theme such as job applications and COVID issues.

Figure 1

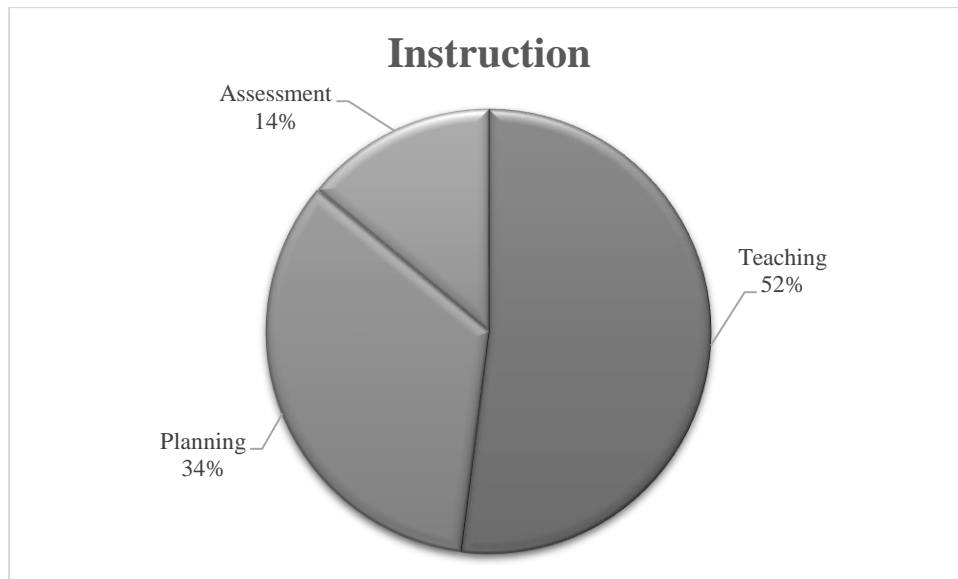
Reflection Topics



For each primary theme, I identified sub-themes. Sub-themes are related to the primary themes and provide more details about student teachers' reflections. The sub-themes for the theme of *instruction* are teaching, planning, and assessment (see figure 2). For the *management* theme, behavior, classroom, and time are the sub-themes (see figure 3). The sub-themes for the theme of *relationships* are relationships with students, cooperating teachers, and families (see figure 4). Within the *learning experiences* theme, student teachers identified learning from cooperating teachers, practice, and reflection (see figure 5). The sub-themes for the theme of *characteristics of effective teachers* are diversity, flexibility, and confidence (see figure 6).

Figure 2

Instruction Sub-themes



Instruction: Teaching, Planning, and Assessment

For the instruction theme, student teachers reflected on three main sub-themes which are teaching, planning, and assessment.

Teaching

Student teachers reflected on what they learned from the instructional cycle. One way they did this was by thinking back on what happened in their teaching, what worked well or did not work well during the lesson. A student wrote that “I learned how to pick a book that is at an appropriate level for the students I will be working with, the format of how the lesson should be taught, and how to follow-up with the students after the lesson is over” (P5R1).

Student teachers also reflected on their teaching experiences in the classroom and how they might adjust lessons to engage their students more. For example, one student teacher wrote that:

I discovered my students do like writing, they just needed prompts that engaged them! I decided to switch up writing by adding visual writing prompts. I had students close their eyes to visualize the setting I presented before having them open their eyes to the most unrealistic photo ever. They loved it and had so much to say. (P14R7).

This kind of reflection can help student teachers see themselves as agents in the classroom as they learn how the instructional cycle translates into practice.

Planning

Student teachers reflected on what they planned for the lessons. They wrote about how being well-prepared helped them in teaching. One student articulated that:

I am an anxious person but this whole week, I have been confident in my abilities because I have the day mapped out and planned and I know what I need to be doing. It's a great feeling and I'm really enjoying having the space to myself to figure out how I want to teach instead of just following what my CT does. (P10R5).

When student teachers reflected on their lesson planning, they sometimes considered how they might plan better in the future teaching. Another student teacher stated that:

I learned I must still prioritize some things from my to-do list during breaks. I was finally able to take the content test last Monday and cross that huge weight off my list. I also worked ahead on a few assignments and lesson plans. I think having a plan and learning to find a healthy balance of work and when to completely disconnect is something I would like to take with me into my future practice. (P14R6).

This student teacher reflected more broadly on planning, considering, at a meta-reflective level, how she could organize her time so that she could be effective in her teaching and have time to do other things.

Participants made reference to planning across reflections, which they believed is important to teaching. It might help them think about how their teaching will run smoothly in the classroom and anticipate any situation that might arise during the lesson.

Assessment

Assessment is another aspect of the learning cycle that student teachers reflected on. Student teachers thought about their methods of assessment and expressed some ideas that they thought might help them prepare assessments that matched their learning goals. One student mentioned that:

I've learned a lot about how to use authentic observation and assessment to show the child's understanding instead of requiring them to show it by using another skill that isn't being assessed and may limit their ability. (P10R8).

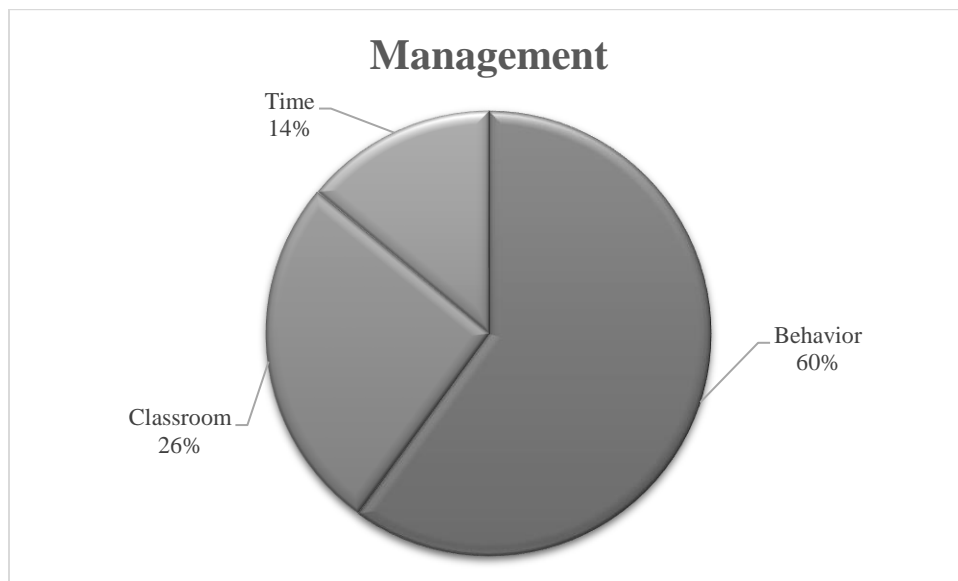
By reflecting on assessments, student teachers may not only learn about the abilities of their students in learning, but also, they may learn about themselves and their teaching. One student teacher wrote that:

This week there was a formative assessment after each lesson in all subjects. We did a combination of turn and talks, verbal responses, written responses, and exit slips. The formative assessments helped me to reflect on my teaching as well as the student's learning. I was able to adapt my lessons and teaching based on the feedback and what I gauge the students still need more practice with. (P11R6).

As the data shows, reflecting on instruction including planning, teaching, and assessment supports student teachers on their teaching practices which will benefit both themselves and their students.

Figure 3

Management Sub-themes



Management: Behavior, Classroom, and Time

For the management theme, student teachers reflected on three main sub-themes which were behavior, classroom, and time. In this study, I categorized student teachers' reflections into *behavior management* when they mentioned to a certain students' behavior issue that they experienced or shared behavior management strategies. For *classroom management*, student teachers' reflections were categorized into this sub-theme when student teachers mentioned their experiences to manage the whole classroom to support students' learning. When student teachers mentioned their management about time they spent in the classroom for the lesson or manage time for themselves to prepare for the lesson, their reflections were categorized into the *time management* sub-theme.

Behavior Management

Behavior management was an issue that student teachers reflected on frequently when they experienced students' behaviors and they had to deal with them. One student wrote in her reflection about the student's behavior:

One of my students has been acting out a lot over the past couple of weeks. It has been really challenging to manage his behavior, especially because he lies to his mom about it when he gets home. I have been working on communicating daily with his mom with more specific details on his behavior. (P4R5).

She defined student's behavior that she thought it was a problem and reported on how she managed on this problem.

Another student teacher reflected on how she dealt with students' behavior in the classroom. She explained that:

One student in particular who when my CT wasn't there, he had a lot of challenging behaviors umm I don't know if he can't get away with things when my CT wasn't there. He's having a hard time coping with the changing routine I guess or maybe a mixture I'm not totally sure. He had a lot of challenging behaviors since she's been out and we even noticed that before she's been out. Umm, he will get frustrated very easily, he will start sobbing in the classroom, leaving a whole group lesson, starting augment with other students and yelling to other students just things like that. I feel like I've handled his behaviors a lot better than I would have at the beginning of this semester. Just because I've been able to I feel like I've learned a lot this semester and I am able to give myself some time to kind of breath. I remember that he's seven he is not doing this because of me like he had a tough time. We've been able to kind of sit down and talk. He knows

now that if he is having kind of trouble he can just go to our relaxation station or he could move himself to we have like a back table where he can sit if there is nobody else around if he needs some time by himself he can calm down and we have been talking about it. Since this has been a daily occurrence, it becomes a part of our regular routine. The past week of him you know being frustrated and being recognize within himself that he is frustrated and taking a time to stop himself and talk about it and so I think getting in routine of it has made a change a lot easier for him and I'm very proud of the way I can handle it. I feel like it's more productive than just you know but anything else I can do for this situation. (P7R7).

Reflecting on students' behaviors helped student teachers learned from their own experiences and learn how to deal with their students if the same issues happen again.

Classroom Management

Student teachers reflected on classroom management when some issues happened, and shared about their experiences when they tried different strategies in classrooms. One student mentioned that:

The biggest challenge I overcame was earning my place in the classroom and respect from the students. Once I became firmer and more serious, they began to look at me as a teacher. I have been using the wait strategy, giving out consequences and following through. The climate has drastically changed for the better for me/us and I am doing much better! (P14R3).

Reflecting on classroom management during the semester helped student teachers consider what worked best for them that they could use in future teaching. Another student teacher stated that:

I'm very new to classroom management, but I think that because I've been there the whole year and my CT had shown the kids that I was also a teacher, that they definitely had a lot more respect for me and took me more seriously. I knew that I wasn't playing around when I said to stop. This is your final warning. Like that's what I meant. Which I did get easier like when I first took over things. Definitely there was a lot of testing me, but by the end I feel like it was, I felt like I had a pretty good control over the classroom. (P4R8).

Other student teachers reflected on classroom management in different ways such as student's seating or classroom atmospheres that support students' learning.

Time Management

Time management was another issue that student teachers reflected on. When student teachers had experience with time management, they thought back on it and learned about how they could better manage their time. A student teacher stated that:

I have been a lot more comfortable with knowing how long something will take, and when things need to be wrapped up. I will start teaching math next week and this will be an area for me to really test what I have learned about keeping track of time. (P8R2).

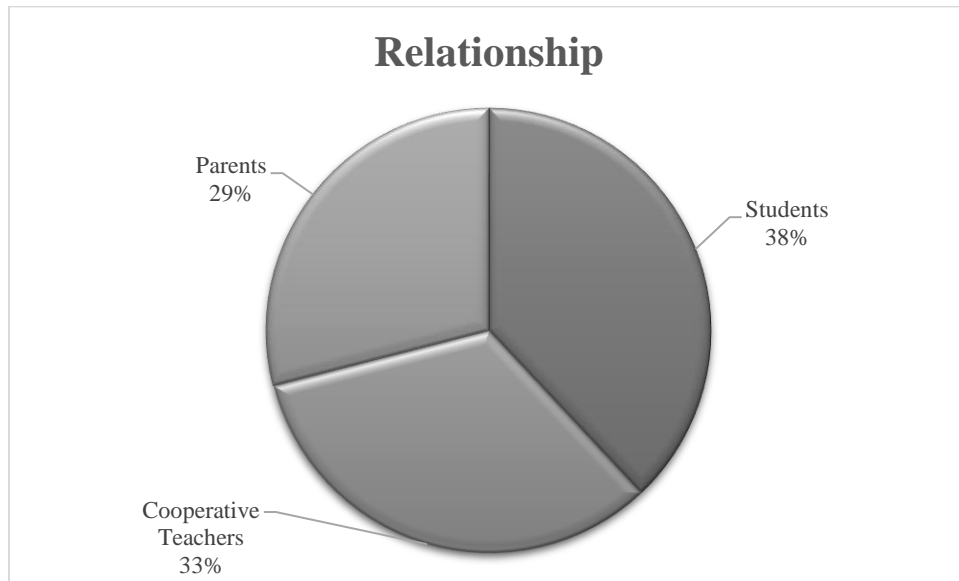
Apart from time management in the classroom, student teachers also reflected on time management on their own schedules such as time management for planning lessons. For example, one student teacher mentioned that:

I guess what I'm learning about is time management. I know I stated this before, but time management not just with our class but time management with student teaching and trying to come up with lessons for the next week. (P3R4).

Reflecting on different aspects of management supported student teachers in developing management skills for their teaching practice.

Figure 4

Relationship Sub-themes



Relationships with Students, Cooperating Teachers, and Parents

For the relationship theme, student teachers reflected on three main sub-themes which were relationship with students, cooperating teachers and parents.

Relationships with Students

Student teachers reflected on different aspects of relationships during their student teaching semester. They realized the importance of having good relationships with students in order to have trust and respect from students before they are able to have good communication in lessons. For example, one student mentioned that “the more I have made an effort to create relationships with them. It has been really reassuring to me to see my students enjoying the lessons I have created” (P2R2). This student teacher expressed that by creating relationships with

students, she built trust with them, so they enjoyed lessons better. Another student teacher reflected:

One unexpected discovery that I made during my student teaching is that my hardest students have become some of my favorites. At the beginning of the year, I never would have expected this to be the case. However, looking back I can see how much time, effort, and love I have poured into these students in particular and how much I have grown to care for them. I hope that the growth I have seen from them this year continues as time goes on. (P5R8).

The language that this student used such as time, effort, love, and care indicates strong relationships between her and her students. It showed how hard she tried to invest her love in students to build trust and finally, she found it was worth it in the end.

Relationships with Cooperative Teachers

Student teachers wrote about their relationship with their cooperating teacher (CT). Some student teachers reflected on the support they got from their CTs. One student teacher who got support from her CT wrote in her reflection:

I could say that I was, may be similar to my CT. There were lots of aspects where I wasn't and we got along great. I loved that I was placed with her and I'm super grateful and thankful for all that she was able to teach me and we had a wonderful relationship professionally and personally (P12R8).

Another student teacher wrote in her reflection:

As an intern I am also proud that I was matched with a supportive mentor that nurtured my growth as an educator and became a lifelong friend. We would converse and collaborate multiple times each school day and she made me feel like I was a part of the

team of educators from the first day. She also supported me on days when I was not feeling confident in my teaching abilities, and I in turn supported her when she had rough teaching days. (P1R9).

However, some student teachers reflected on a lack of support, which resulted in not having a good relationship with their CTs. One student teacher reflected on what she perceived as a lack of support, wishing that she had more:

My student teaching did not seem the same to most of my peers. I had a cooperating teacher that provided me with little to no feedback or support throughout my experience.

This was very tough for me to deal with, especially at the beginning. (P2R10).

Another student teacher wrote: “My CT last semester was not someone I felt comfortable around. I felt like she did not like me, and I spent a lot of time making copies for her and not learning a lot” (P9R8).

These student teachers seemed to believe that having a good relationship with their CT would provide them with a good student teaching experience. Student teachers would like to have strong support from their CT and the advice from their CT is valuable for them.

Relationships with Parents

Student teachers also reflected on relationships with parents, as student teachers learned that parents should be partners in their child’s education. One student teacher wrote that:

The other area that I grew was participating in parent teacher conferences. My CT and I identified four students that we have concerns about and were able to schedule a meeting with their caregivers. The communication process between the teacher and caregivers is very delicate and requires a lot of give and take. (P1R5).

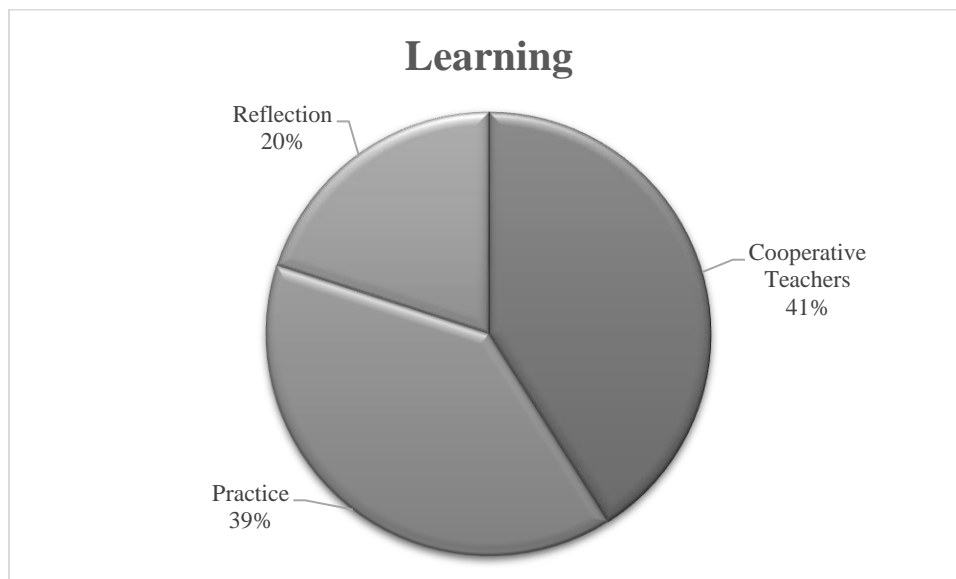
Another student teacher wrote that:

I've learned the ins and outs sort of collaborating and working with parents, so not this week, but the previous week we had a progress monitoring meeting with it was myself, my CT, our school social worker, and a particular first grade kiddos, mom and we all met together. We had been, they've been having progress, monitoring meetings multiple times. The social worker observes him fairly often, and they need a lot with the mom. (P12R2).

These examples demonstrate that the student teachers believed that having a good relationship with parents and families helped them to share their concerns with caregivers and find a solution to support students.

Figure 5

Learning Sub-themes



Learning Experiences: Cooperating Teachers, Practice, and Reflection

For the learning experiences theme, student teachers reflected on three main sub-themes which are learning experiences from cooperating teachers, practice, and reflection.

Learning Experiences from Cooperating Teachers

Student teachers reflected on what they considered to be their learning experience or what they learned during their student teaching semester. First, student teachers wrote that they learned from their cooperating teachers. For example, a student teacher who learned from her cooperating teacher wrote that:

I had my first observation and some of the feedback I received did not reflect how I felt my lesson went. However, after accepting the constructive feedback from my supervisor, I received everything she said. From that, I learned not to be so hard on myself and that I will not have all the answers the first time. I learned I will make mistakes and that it is how I respond/bounce back is what makes the greatest impact. (P14R2).

Another student teacher wrote:

My CT was out for two days, and it was planned in advance. She walked me through the process of how she plans for a sub and how she prepares. It was really eye opening because a lot goes into thinking and planning for a person who probably has never been in your classroom. There are a lot of small things to think about when planning that it takes a lot of thought and concentration. (P11R4).

Learning Experiences from Practice

Student teachers also reflected on how they learned from their teaching practices. One student wrote that:

The thing I learned was how to effectively teach a whole group over Zoom which is something I hope to carry on into my teaching practice, giving the kids moving, not letting them sit just. Looking at each other for too long. Get them involved. Let them talk. Don't just leave them muted the whole time. (P6R3).

Another student teacher wrote:

This really showed me how important that is to have, I guess you really can't read about it and learn about it until you actually experience it, and I think having it fully be all on me this week has this been a really great learning experience. I really loved it. (P15R5).

Learning Experience from Reflection

Some student teachers wrote what they learned from their own reflections. One student teacher wrote that:

Reflection has been a huge part of my student teaching, to the point that before I even finished teaching a lesson, I made mental notes of "oh I should have set it up like this." Whether it was a typo on a worksheet, or how I phrased what I was saying. There are so many instances that come to mind when I think of this, but I know that I have them now and can learn for the future, as I will never be done learning. (P8R8).

Another student teacher wrote:

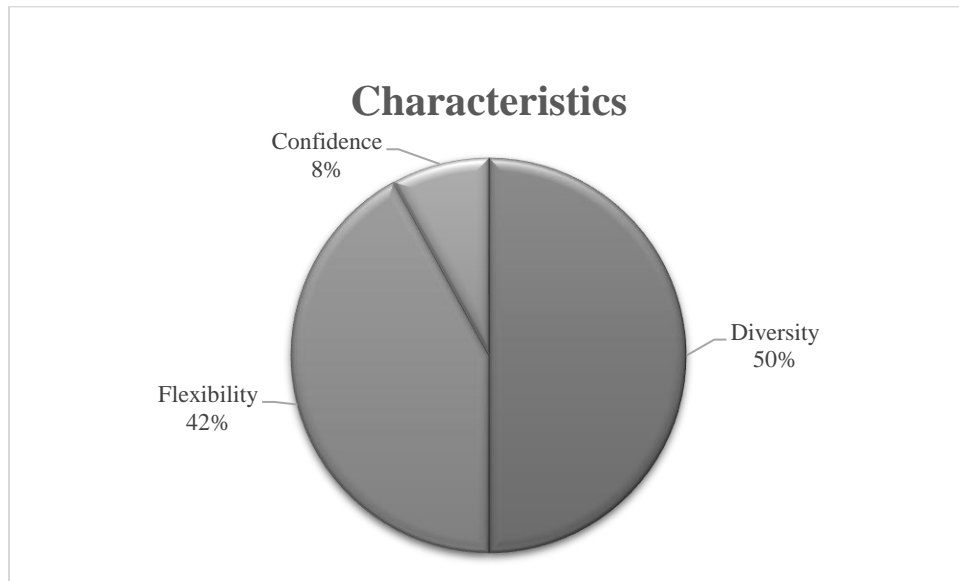
I have become dependent on reflection in order to organize lesson plans and determine how successful the school day was. My mentor and I verbally reflect several times each day and we discuss things such as how well students understood the lesson expectations, student engagement and validity of resources. On multiple occasions I downloaded teaching resources from educational websites and then realized that the answer key was incorrect, questions were poorly written or vital content was missing. When I experienced difficult moments with students during my student teaching experience I would rely on reflecting with my mentor. (P1R10).

Student teachers realized that what they learned during student teaching helped them develop their teaching practices. This sub-theme also made-up part of the data analyzed to understand

student teachers' perceptions on reflection. I took the data from this sub-theme for open coding and categorized themes for student teachers' perceptions on reflection.

Figure 6

Characteristics Sub-themes



Characteristics of Effective Teachers: Diversity, Flexibility, and Confidence

For the characteristics theme, student teachers reflected on three main sub-themes which are diversity, flexibility and confidence.

Diversity

Student teachers realized that having specific characteristics might help them to understand students. From their reflections, most student teachers realized that being inclusive and understanding diversity is a characteristic of effective teachers. These student teachers reflected on how they experienced diverse students in their classrooms such as special education students, ESL students, or students with IEPs. One student reflected: “Understanding each child is unique understanding that every relationship, every student, everything in your classroom is unique and it could alter and change at any point” (P15R1). Student teachers realized that it is

important to support students from diverse levels. Understanding that students are diverse might help student teachers prepare different methods to teach diverse groups of students in different ways. For example, one student teacher stated that:

I think this is really important considering many classrooms are facing these challenges right now with having such diverse groups of learners. I want to make sure I am that prepared and have back up plans and ideas for changing lessons and schedules in case necessary. (P10R1).

Flexibility

Another characteristic that student teachers wrote about was flexibility. One student teacher wrote that:

During my student teaching experience, I have learned a lot about flexibility. I think one take away is that no matter how much planning may go into an activity, it's important to have alternatives and be mindful of the students and their abilities. For example, at the beginning of the year I was wanting to do lessons and activities, but my students were not at a level where they would be able to do them, and I had to adjust things to ensure all students could participate and be engaged. (P10R8).

Another student teacher wrote that:

While I like to think that I'm a flexible person, I'm also very organized like to do things in certain ways and like this is the way that I'm gonna do it every single time and so this is something that I want to work on because while there's good to be an organized there's also cons and, I feel like I kind of find that balance between being organized and having things in certain ways and also being flexible. So, I'd like to practice adapting more to my students instead of just following a script I'm given. This is something that I will

continue practicing throughout the semester and kind of work on because this is the time where I am able to try new things out and practice. (P11R3).

Confidence

Another characteristic that student teachers saw as important was being confident in classrooms. Student teachers reflected on how they improved their confidence during the semester. One student teacher wrote that:

I can relate this to the thing that I just said about what I learned is I want to be confident in myself and confident in what I deserve and how I should be supported within my classroom within my school, from my principle from my administration. (P15R1).

Another student wrote that:

I learned the night before that it was an e-learning day and I might lead by myself. Also, I was pretty proud of myself on that day, and I came back really positive about myself I'm still learning to basically put my foot a little bit more confident. In my ability, I know that I do have a great idea and everything like that and it just being more confident let's say something I'm also learning about. (P3R2).

Student teachers used reflection to identify characteristics that are important to develop in themselves to support their teaching practices.

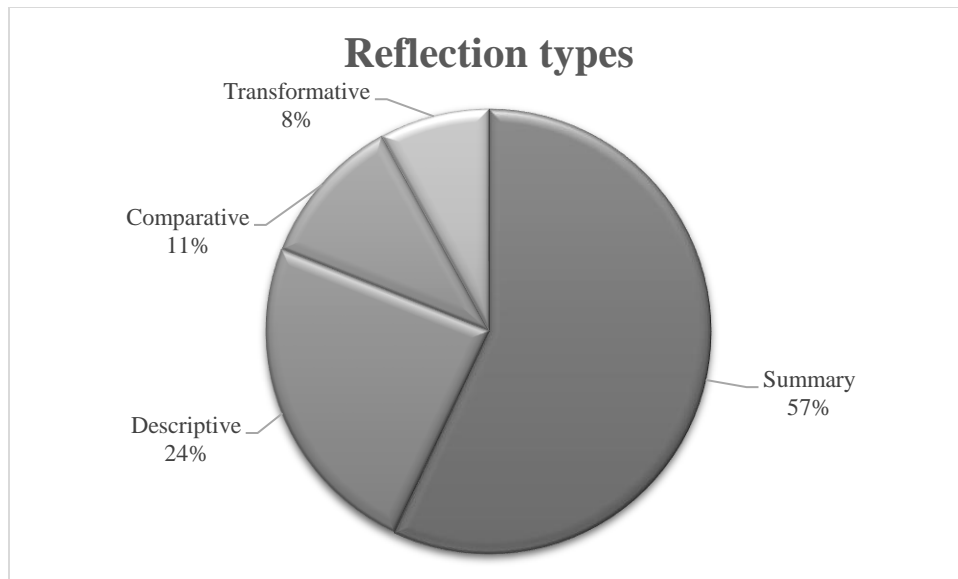
Reflection Structures

Reflection structures are the combination of themes and types of reflection found from a priori codes. To understand how student teachers reflect, or whether there were patterns in the type and/or structure of their reflections, I conducted an a priori coding using the types of reflecting scheme I created (see Chapter 3), I found that student teachers written and oral reflections included the four types of reflection included in the scheme. However, some types

were more prominent than others (see figure 7.). The findings showed that student teachers reflected on summary, descriptive, comparative, and transformative types of reflection respectively.

Figure 7

Reflection Types



According to the analysis of themes and types of reflection, I found four different ways that student teachers' written and oral reflections were structured: multiple types and multiple themes, one type with multiple themes, multiple types with one theme, and one type and one theme.

Multiple Types and Multiple Themes

From the analysis of 124 student teachers' reflections, the structure that was used most by student teachers was multiple types and multiple themes. This is when student teachers wrote or talked about more than one topic and used more than one type of reflection. For example, Participant 7's reflection 2 shows that she discussed various topics and used different types of

reflective writing. She wrote about a specific teaching technique, classroom strategies, and flexibility in the classroom by using different types of reflection.

The first topic was the instruction on writing. When reporting on this topic, she talked *about general situations (summary), and identified a problem and solution (descriptive)*. She stated that “We have a lot of kiddos in our room who, they don’t know how to write certain letters or numbers and so, or they need help spelling a word.” She found a solution that worked well which was “a little trick but it was something that I thought I was really need. I learned that you can write on tables with dry erase Expo markers and they just erase. And I thought this was just so... neat.”

Then, she shared strategies for classroom management by using a *comparative* type of reflection. She *compared alternative ideas* from her cooperating teacher and the technique she found on a social media application. She mentioned that:

I’m using my CTs classroom management technique, they seem to work for her but sometimes they don’t work for me. So, I have been trying to research different techniques to use. And actually, TikTok has been a really great tool for me recently. I’ve seen a lot of teachers on TikTok using different classroom management techniques that have worked for them. And I’ve been kind of trying out different things.

She also mentioned the *change of her perception* of flexibility by using a *transformative* type of reflection. She stated:

something that I kind of learned is that it’s okay to veer off from my lesson plans, it’s okay to change thing up, if I need to, or if I think something would be better or if like a certain lesson isn’t going well and I have a backup we can just scrap where we’re at and start new. I think for so long I’ve been so worried about, like, okay, I have to follow my

lesson plan because this is what I planned for, but like, I don't, I don't actually have to follow it.

One Type with Multiple Themes

In some reflections, student teachers reflected on multiple themes by using one type of reflection. Mostly student teachers *wrote about general situations* that happened during their teaching practice which is considered a *summary*. They did not give details on a specific issue but gave an overview of various events. For example, Participant 2's reflection 1 was written only in summary type. The first topic that she wrote about was lesson planning. She wrote that:

This week, I began planning to take over Math and Reading for the following week. In this time, I communicated with my cooperating teacher about the lessons that would be taught the following week and planned how I would implement instruction. My cooperating teacher gave me the lessons to be covered in Math and Reading, and from there.

Then, she moved her focus to write about relationships with students. She wrote that:

Moving away from instruction, each day I get to know and connect with my students on a deeper level. It is reassuring that students are starting to come up to me with questions instead of my CT. I can tell they are building trust with me, and I hope that this will continue for the remainder of my time

Finally, she summarized her experience about professional development in classroom management. She wrote that:

This week, we were introduced to engagement strategies to implement in your classroom that encourages kids to get out of their seats and collaborate with other classmates. Most

of the strategies they informed us about, I already was aware of because I was introduced to them by my professors and texts from Illinois State University.

Participant 2's reflection 1 shows that she wrote about various topics by using only *summary* to provide general information about her experience.

Multiple Types with One Theme

Some students reflected on a specific issue deeply in a single reflection. These students focused on each detail and tried to find a way to improve their teaching practice on that certain issue. This type of reflection allowed student teachers to focus on one topic to figure out how to deal with a specific issue. Their responses indicated that they engaged in different types of reflection in a single week and explained more details about each situation.

For example, in one reflection I found elements of *summary*, *descriptive reflection*, *comparative reflection*, and *transformative reflection*. Participant 15's reflection seven focused on the issue of relationships with parents. The student teacher discussed this issue with four types of reflective writing. She began with a *summary by telling a general event* that happened. She mentioned that "what I learned this week was how helpful communicating with a parent is not just only sharing their growth that the child could possibly behaving, but also those strengths." She stated the solution to make a good relationship with parents which is a *descriptive reflection*. She said that:

I took the time to reach out to parents to speak and share with them how proud I am of their students and how much I love watching them grow and how much I'm excited to see them grow and graduate on to being first graders.

She provided *enough specific context* which was considered a *comparative reflection*. She mentioned that:

So, I just learned that having that open communication back and forth, having it both be about growth and strengths really helps build that communication and that mutual respect between parents and teachers so because I got experience doing that this week and learning about how effective that is, I want to carry that on into my future classroom.

She talked *about how she evaluated solutions from current evidence that is most reasonable which is a transformative reflection*. She confirmed that:

Just making sure there's that open communication constantly and sharing those good things with parents, but also sharing the strengths because we all know how that's equally important, but parents really love to hear the great things that you have to say about their child.

Participant 15's reflection 7 shows that she focused on a specific topic and used multiple types of reflective writing.

One Type and one Theme

The structure I found least in the data set was one type and one theme reflection. This happened when student teachers wrote a short reflection and did not provide enough detail on their reflections or could not think of any issue that they experienced during their teaching practice. For example, Participant 13 wrote her first reflection in a summary way about what she learned from the course reading. She wrote that:

I think this is a very useful document to use especially when I may face an ethical dilemma and I don't know how to proceed. I can reference it when talking to families about something that I may not know how to talk about.

In her reflection, she did not reflect on her teaching experience. This might be because she thought she had to reflect on the topic of the course reading of the week which was about ethics.

She wrote that:

I tried to think of a specific ethical dilemma that I have faced, and I could not come up with one. I felt like I needed to have one since that was part of the discussion post, but I really couldn't think of one and wasn't going to make one up. I decided to look at a few other posts that were already up and saw that some of my peers also did not have one. I felt that it is probably a good thing that I can't think of one because that means that everything in my clinicals and student teaching has gone well.

Participant 13's reflection one is an example of one type and one theme structure. As she wrote only on what she learned from the reading in a summary way.

Student Teacher Perceptions on Reflection

To answer the second research question, I analyzed student teacher's perceptions on reflection from four student teachers' interviews and 15 student teachers' perceptions on reflection that I interpreted from their written and oral reflections. I categorized their perceptions into two main themes: process and outcome.

Reflection as Process

Student teachers realized that reflecting every/every other week helped them in teaching practices as a process in three ways; opportunities to look back, opportunities to learn from experiences, and opportunities to plan for future lessons.

Opportunities to Look Back

Student teachers thought reflections helped them to look back on their teaching practices. For example, Participant 2 stated that:

...so through that essay we were able to really reflect on our responsibilities, and how our responsibilities kind of were built upon each other; how we were able to collaborate with other people in our school, and students and it was a really good way to kind of think back on the semester, and I actually was able to use your prompts, too, when writing the essay, because I was able to go back and reflect it from week to week.

Another example is from Participant 9. She said that:

I think that when you're writing the reflections it gives you a chance to think about what you did, and how you want to redo it, or how you would do it differently in the future, and without writing the reflections, I don't think you think about that as much, I mean, I think you do. But to get it down on paper, I think really helps you to see that like the big picture.

Opportunities to Learn from Experiences

One student teacher wrote on her final reflection that she realized how important reflection is and how it impacts her teaching practice. She found that reflection benefited her teaching and because it helped her learn about what she did that can help with the future. She wrote that:

Reflection has been a huge part of my student teaching, to the point that before I even finished teaching a lesson, I made mental notes of 'oh I should have set it up like this.' Whether it was a typo on a worksheet, or how I phrased what I was saying. There are so many instances that come to mind when I think of this, but I know that I have them now and can learn for the future, as I will never be done learning. (P8R8).

Another example is from participant 10's final reflection. She wrote about how she learned from her experiences by reflecting with her mentor and appreciated how her mentor gave her advice.

She wrote that:

I have become dependent on reflection in order to organize lesson plans and determine how successful the school day was. My mentor and I verbally reflect several times each day and we discuss things such as how well students understood the lesson expectations, student engagement and validity of resources. On multiple occasions I downloaded teaching resources from educational websites and then realized that the answer key was incorrect, questions were poorly written or vital content was missing. When I experienced difficult moments with students during my student teaching experience, I would rely on reflecting with my mentor. I wanted to make sure that I was being firm with behavior expectations, but not mean or intimidating. My mentor gave me several helpful suggestions on how to manage our students while supporting a positive classroom environment.

Opportunities to Plan for Future Lessons

Reflection helped student teachers plan for their future lessons. For example, one student teacher wrote that:

Reflection is an essential responsibility of effective educators. It is important to reflect often to ensure you are providing instruction that meets the unique needs of the students. Throughout my student teaching experience, I have been able to reflect on my instruction. I am currently participating in a research project with a graduate student at Illinois State where I journal about my student teaching experience each week. This has

provided me with designated time each week to reflect on my teaching and how I can best meet the needs of my students. (P2R8).

Another example is from participant 1's interview. She talked about how reflection helped her in planning the lesson. She said that:

I think what has helped me is when my mentor and I would meet and sometimes it was several times a day, and then, when I was in the part of my student teaching, where I was doing all the lesson planning, and locating resources for our students. It just kind of helped me stay on the course and try to be authentic with my teaching, and then I was able to like have those conversations with my mentor, and let's take math as an example I would, you know, do a lesson out of their workbook, and then maybe find some supplemental resources.

The opportunities to look back, learn from experience, and plan for future classes are some perceptions that student teachers think are processes that help them in their teaching practices.

Reflection as Outcome

Student teachers perceived that reflection helps them as they can see the outcome of reflection in two ways; improve teaching practices and change.

Improve Teaching Practices

Student teachers articulated that reflecting on their teaching practice might help them improve their teaching practices. For example, Participant 1 pointed out that:

It helped you try to figure out things what to do better on, and what to work on, especially when we had other teachers like my CT or my supervisor gave us advice with reflections they gave me, it provides on my reflections so it's good to have that as well. And just to reflect as a teacher, and how I can better myself from my students.

Participant 2 mentioned in the interview that “I think that reflective thinking is like very important for teachers to practice, just because I think that it will only make you in your teaching practices better.” and:

I just feel like I’m constantly thinking about what could I have what could I do better next time? For the next time. I were to teach this lesson or this concept based on how my students were able to understand or grasp that knowledge. Yeah, I’m constantly thinking about what I could tweak change or differentiate for, for students which can sometimes be stressful. But I think that in the long run it’s very effective.

Change

Student teachers understood that reflection might help them change their perceptions or practices in teaching. For example, participant 1 talked about the change of her mindset on reflection. She said that:

I definitely think that my mindset has shifted in a positive way that I think at the beginning of the semester I, I wasn’t I think I was a little more critical on myself, and I didn’t like the idea of somebody criticizing, or even having those conversations, because then I felt like I wasn’t being successful. But now I know that it's okay to have those conversations in that kind of is part of being successful, is being able to reflect back on yourself and realize I could have done better.

Another example is from participant 2. She realized that she had changed herself to manage students’ behaviors better. She mentioned that:

I think that through reflective thinking I was able to really implement my own classroom in behavioral management kind of because I believe I didn’t have any at the beginning of the semester, and, and I think I’ve come a long way.

Student teachers saw the outcomes of using reflection as a way to improve their teaching practices and to see changes in themselves.

Relationships between Student Teachers' Perceptions on Reflection and their Reflection Practices

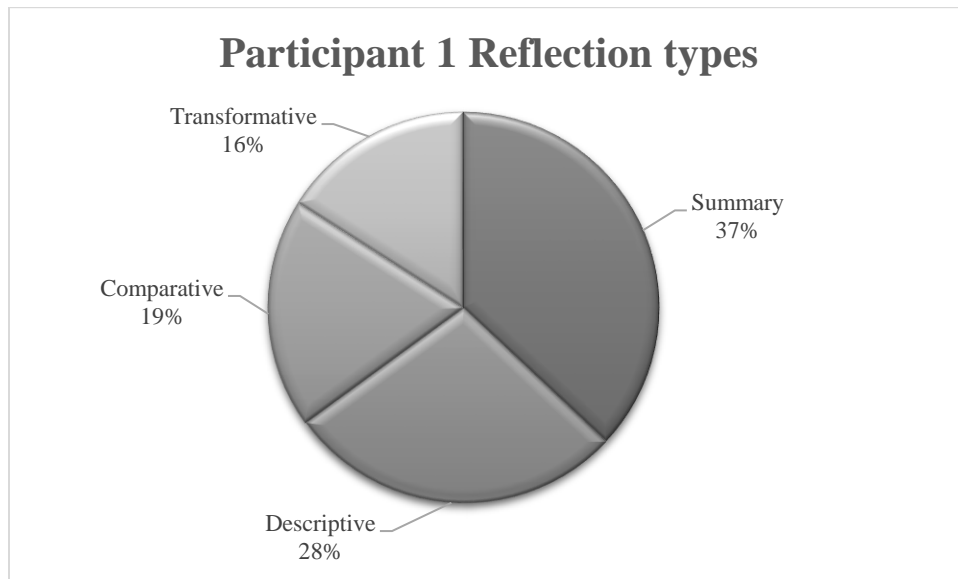
To answer research question 3, the relationship between student teachers' perceptions on reflection and their reflective practices, I relied on data from the four students who participated in post-reflection interviews because they provided both written reflection and interview data. I did not find a clear pattern of relationships between teacher perceptions on reflection and their reflective practices. Therefore, I will answer research question three by reporting on four cases as they have their own uniqueness in their reflections and perceptions on reflection.

Participant 1

There are three main points from participant 1's perceptions on reflection. These perceptions reflect how she realized that reflection is important. As she thought reflection was beneficial for her teaching practices, it was also evidenced from the analysis of her written reflections that she wrote her reflections in four types (see figure 8.).

Figure 8

Participant 1 Reflection Types



Each type of reflection reports a close percentage of the total. Although the summary is the primary type, participant 1 also reflected in other types of reflection.

Of her ten reflections, seven of them contained multiple types and themes, and three of them were multiple types with one theme. The reflection in various types indicated that she thought about a certain issue from different perspectives. None of her responses present only one type of reflection. This way of reflection in various types might be a result of her perceptions about reflection that would help her develop her teaching practices. In the next section, I report three main pieces of evidence from the interviews that show how participant 1 thought reflection was beneficial to her: the changing perspective on reflection, honest feedback and authenticity, and her plan to continue reflecting in the future.

The Changing Perspective on Reflection

From the interview, participant 1 expressed her changing perceptions on reflection. As she mentioned, “prior to my student teaching semester I hadn’t really done much reflection, but I

found that it was very helpful for me, and thankfully I had a mentor that supported reflection.” She had more opportunities to reflect as she said that “Sometimes we would do it multiple times a day, which was very helpful for me as a student teacher, and I found it to be a very beneficial, positive experience.” She understood how reflection was helpful and also, with support from her mentor, helped her see its benefits. In addition, she shared that before she felt that reflection was to critique herself, but now she realized the positive side of doing it. She said that:

I know coming into it. I wasn't really sure how I would feel about critiquing myself throughout the day. Sometimes, that's kind of a hard thing to process if you've just acknowledged that you could have done things better, and maybe you know self-improvement is something that we all have to think about, but I think it's the way that you communicate it with yourself and the way the mentor communicates it. It can become a positive thing, not always a negative thing. So, I had a good experience with reflection, and I, I, now, I, depend on it, like to get myself through the day professionally.

Therefore, changing her perspectives on reflection from being criticized to becoming a part of her success makes participant 1 realize that reflection helps her to look back on herself and realize how she could have done better.

Honest Feedback and Authenticity

Participant 1 thought that reflection was a learning process for her because it helped her to understand herself. She said that “It's honest feedback of how each individual person processes that information and there's really no wrong answer as long as you are honest with your response.” By being honest with herself and reflecting on what happened, she developed her teaching from what she experienced. For example, she explained how reflecting with her mentor helped her prepare online resources for students. She stated that:

It just kind of helped me stay on the course and try to be authentic with my teaching, and then I was able to like have those conversations with my mentor, and let's take math as an example I would, you know, do a lesson out of their workbook, and then maybe find some supplemental resources. And some days, though that worked great other days it didn't work well at all, because maybe the directions given for the additional resources is not very clear, or I know I had said in one of my reflections there were a few times I had downloaded resources online, and the questions were written incorrectly. So, they didn't match the answer key. I know I downloaded a card game one time for my kids, and we played it, and none of the answers matched the cards. So, I mean just these little like learning things so I think that just being honest with myself, and also like you know, being real with my students. And just you know when those things happen, I'm like hey, I make mistakes, too. Nothing is perfect. And then also, my mentor was like, Okay, now we know not to use that resource again.

As participant 1 thought reflection is honest feedback to herself, she used reflection as an authentic tool that could help her think back on what happened in the classroom and find solutions to problems to improve her teaching practices. She did not see reflection as an assignment that needs to be completed. She reflected in multiple perspectives to help her develop her teaching in different ways.

Plan to Continue Reflecting in the Future

One aspect that confirmed how participant 1 realized that reflection was beneficial for her was when she explained how she would implement reflection in her future teaching. She mentioned that:

I'm going to have to reflect on my own experiences. You know my plan is, I would like to have like, maybe a journal, or something like that that I maintain, and just kind of take notes for myself. And you know, document, what's working and what's not working? What can I change? What can I do better? Any questions that I have, you know, and things like that. So, I definitely plan on incorporating reflection in my professional career as I move forward.

Having positive experiences on reflection made participant 1 understand why it was important to her to keep reflecting. She said, "It was a great experience for me too and I think like I said I learned something about myself and kind of became like an opportunity to me to kind of write about my feelings and experiences with no judgment."

Apart from the three main perceptions on reflection, participant 1 confirmed the changing of her practice in the interview. This demonstrates that she perceived reflection as a tool to help her develop her teaching practices and she presented it in both her written reflections and during the interview. Participant 1 wrote about the change in her practice and perception in her written reflection in a transformative way and also confirmed during the interview how she has changed. For example, in her written reflection, participant 1 wrote about how she was flexible in different aspects as she wrote in her reflection eight:

At the beginning of the semester, I would get frustrated when lesson plans changed, but now I have a better understanding of why changes can be beneficial. I have become much better at making last-minute changes and adapting lessons based on student feedback and assessment results. Giving students options when completing lessons is also another example of flexibility in the classroom. Some of my students are visual learners, some are

auditory and some struggle with writing. I try to include resources that support all my learners, and the result has been improved engagement and motivation.

During the interview, Participant 1 confirmed that she changed her practice and perception on being more flexible. She stated that:

Before I got into this semester, I was a pretty rigid person, as far as like planning like I would, you know, have something planned, and if there was a change that came up on unexpectedly it would kind of stress me out a little bit and I've definitely learned to be a lot more flexible with the student teaching experience.

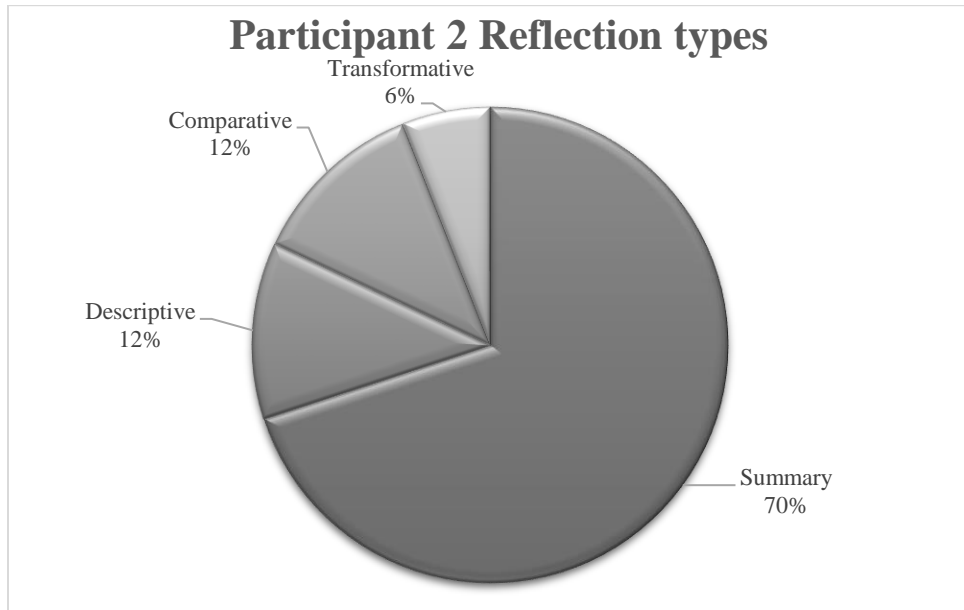
From her perceptions on reflection, participant 1 realized that reflection is beneficial to her and there is evidence from her written reflections that she reflects in various types of reflection as she reflects in various aspects to help her develop her teaching practices.

Participant 2

Participant 2 perceived reflection as a useful tool for her to develop her teaching practices. However, from the analysis of her written reflections, she primarily wrote her reflections in a summary way (see figure 9.).

Figure 9

Participant 2 Reflection Types



Even though participant 2 reported that reflection was helpful, the percentage of her reflection types showed that she primarily reflected in a summary way. She wrote that “Reflection is an essential responsibility of effective educators. It is important to reflect often to ensure you are providing instruction that meets the unique needs of the students.” This demonstrated that she understood that it was important to reflect “often” but did not say about the importance of reflecting in various dimensions.

Of her ten reflections, five of them consisted of multiple types and themes, three were one type with multiple themes, one was multiple types with one theme, and the other one was one type and one theme. In addition, four of her reflections included one type of reflection which is summary. Three main perceptions on reflection explained why participant 2 believed that reflection was a useful tool for her to develop her teaching practices. First, she perceived reflection as a tool for feedback to herself. Second, she thought that to be good at reflective

thinking, it took time to practice. Finally, she realized that reflection helped her to solve problems in her teaching practices.

Feedback to Oneself

Participant 2 reported a lack of support from her cooperating teacher, and she thought this was also one of the reasons why she thought reflection was important for her because she could reflect on her practice to improve it as she did not have an opportunity to reflect with her cooperative teacher. She wrote that:

I liked being able to reflect on my experiences week to week because it helped me feel more confident that I had accomplished so much independently during my time here. I wish I were able to receive more support and encouragement from my cooperating teacher, but through reflection, I understand that I was able to take responsibility for my learning and teaching throughout my experience.

This might be one of the reasons why she reflected primarily on one type of reflection. As she had no one to talk to at her site or lacked different ideas, she had no other perspectives to consider. Participant 2 mentioned that she wished she could get more support from her cooperating teacher. For example, she said that:

I just wish that I was able to get more support or criticism, or feedback of any kind, positive or negative. I just felt very alone during my experience because I wasn't getting the support that I knew other teacher candidates were getting.

Reflective Thinking Needs to be Practiced

Participant 2 reported that she did not think that she was reflective. However, she thought by practicing thinking about what she could do to improve her teaching and make her students

understand lessons better, her reflective thinking skills would be developed. She believed that reflective thinking would show effective results in a long term. For example, she stated that:

I think that reflective thinking is like very important for teachers to practice, just because I think that it will only make you in your teaching practices better. So, my student my supervisor. my university supervisor actually told me, after my last observation, that I was very reflective, which made me feel good because I just guess I didn't even really realize that I do that, but as often as I do. but I just feel like I'm constantly thinking about what could I have done, and what could I do better next time, for the next time, I was to teach this lesson or this concept based on how my students were able to understand or grasp that knowledge. Yeah, I'm constantly thinking about what I could tweak change, or differentiate for students which can sometimes be stressful. But I think that in the long run, it's very effective.

Even though she realized that reflection was important to her, it was evidenced from her written reflections that most of her reflections did not contain different types of reflection. However, this growth mindset showed that even though now she reflected mostly in a summary way, she might reflect in more dimensions in the future. She also stated that she planned to practice more reflective thinking as she said that:

I definitely would really want to take the time. As I was answering the last question, I was just thinking that maybe I could put in a calendar or something, and these days, or at these times each week, or each month, there are to reflect on certain things. Maybe I could find a journal or something that provides me with prompts to kind of make my reflection based on different aspects of my teaching. But yeah, I definitely think it's very important and I would like to do it by, I guess just making it a priority.

Reflection Helps in Solving Problems

The topic that participant 2 reflected on the most was the relationship with students. This was how she thought it was the way to solve the problem for her as she said she did not have enough support from her cooperating teacher. She thought that building a relationship with students would help her manage students' behaviors. For example, she said that:

It was hard, it was hard to learn how to manage behaviors and classroom transitions, with no support or guidance. So, then it started getting to the point where I was like starting to cannot really connect with the kids, and I was just happy that I was connecting with them, getting closer with them, building those relationships. So then, I kind of was like I'm gonna, I'm just gonna deal with this because I enjoy the kids I'm teaching, and, and because I'm fully immersed in taking full responsibility, I spent all day with them so. I preferred that instead of like awkwardly. I don't know. I felt like my, my cooperating teacher was very unapproachable, so that was kind of hard for me. And so, once I started to connect with the kids, things kept getting worse and worse with my cooperating teacher just kind of like not being there for me.

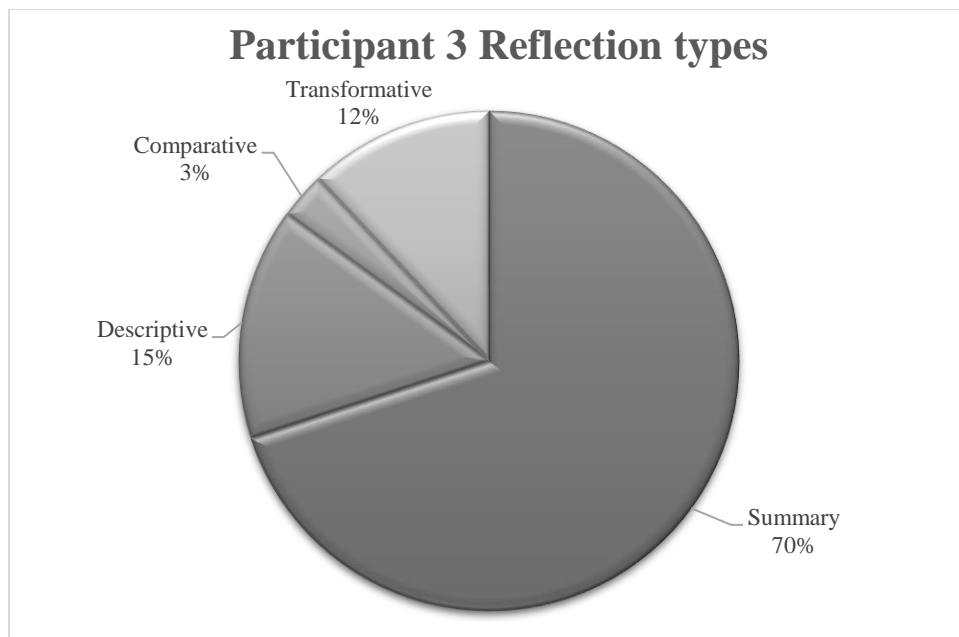
From her perception of reflection, participant 2 realized the importance of reflection and explained the reasons that supported her thinking that reflection helped her in various ways. However, the analysis of her written reflection during the semester showed that she primarily reflected by using one type of reflection which is summary. This could be because she lacked support from her cooperative teacher. However, she acknowledged that reflective thinking skills need to be practiced, so she might be able to reflect in more various dimensions in the future.

Participant 3

Participant 3 realized that reflection was a tool to develop her teaching practice. She pointed out that reflecting with other people provided different perspectives on an issue. In addition, she learned from regularly reflecting on her concern issue. The analysis of her oral reflection showed that she reflected primarily on one type of reflection (see figure 10.).

Figure 10

Participant 3 Reflection Types



The primary type of participant 3's reflection was summary. Of her nine reflections, six contained multiple types and themes and three of them belonged to one type with different themes structure. When she reflected on different themes in one reflection, she used only a summary type of reflection to give an overview of what happened. She thought that reflecting with other people provides different ideas and reflecting consistency on a specific issue was beneficial.

Reflecting with Other People Provides Different Ideas

Participant 3 found ideas from reflecting with other people. She collected different strategies from different people in her reflection as she understood that she might have an opportunity to try it in her future teaching if any of the issues happen. In general, she thought reflection was a good practice and she preferred doing it with other people. She said that:

I think it was good doing reflection because then it helped you try to figure out things to do better on, and what to work on, especially when we had other teachers like my CT or my supervisor give us advice with reflections, they gave me. It provides my reflections so it's good to have that as well. And just to reflect as a teacher, and how I can better myself.

Apart from reflecting with her cooperating teacher, participant 3 reported that she reflected with her friends. She stated that:

I also, I had friends that I had a group chat with, so we will test each other all the time, just kind of having a community within ourselves that okay, if you had a problem, we can help you. And so, we will text each other about different trendies, and different things to do with.

Participant 3 realized that reflecting with other people provided her with different ideas, but something would not always work with her own classroom. She mentioned that:

We're having conversations with other educators in my program, and also doing written reflections as well. So, it was like a whole mixture of a whole bunch of different other reflections. And I think it was really good to do that, especially when we're observing because then you had to talk about okay, what did I observe and why do you think that was effective in that worked. And so, with that we really try to have, we really have to

find the root of what actually happened. Why we think it worked. Now it might have worked in that video that doesn't mean it's gonna work in our class like those are different things. You have to reflect on the tune and those are a lot of things that we all said as educators in the teacher program saying that, okay, this work in this class. But we were actually teachers who know if it's going to work in our class. Who knows if our students are going to be like that or anything like that?

Learn from Reflecting Consistency on a Specific Issue

Participant 3 reflected on "behavior management" the most and only this topic that she used all types of reflection. As she reflected on this issue frequently in different aspects, it was evident that she learned from her reflection when she reflected on different strategies for behavior management. She confirmed that she thought behavior management was her priority. During the interview, she mentioned that:

Mine is like behavioral management, that's like my top priority like curriculum, lesson plans, that, that's like second and third. But behavior management if you can't have like a good strategy here, then it's just hard for it, the whole class. So that's just something that it's like worries me so much, and scares me still to this day, cause I want to show people that I can have, you know the classroom management in my classroom.

Then she confirmed that reflection on behavior management helped her learn more about it and make a change. She said that:

As far as knowledge gained from my reflections, to make a change, I would have to say a lot of stuff came from behavioral management. And how I made changes with that in my classroom. So, I kept building upon those possible relationships, add to reflecting on it, and I added more calling responses that my class uses now my last few weeks are student

teaching I didn't have those in the beginning at all. I did not have those in my head, and then I had to build upon those and listen to other people's reflections, and what they do. And how, I reflected, I added those into that into my curriculum and lesson planning that way. They're more engaged, and I kind of listen to my students, or what they're engaged in. So, I use kind of what they're engaged in, in my calling responses. So, I kind of use that knowledge in my student teaching.

Participant 3 perceived that reflection helped her learn more about the topic that she was concerned the most about. It is evident from her oral reflection that she talked about this topic the most and used all types of reflection on this topic. In addition, in the interview, she confirmed that she learned from reflection by reflecting on this topic.

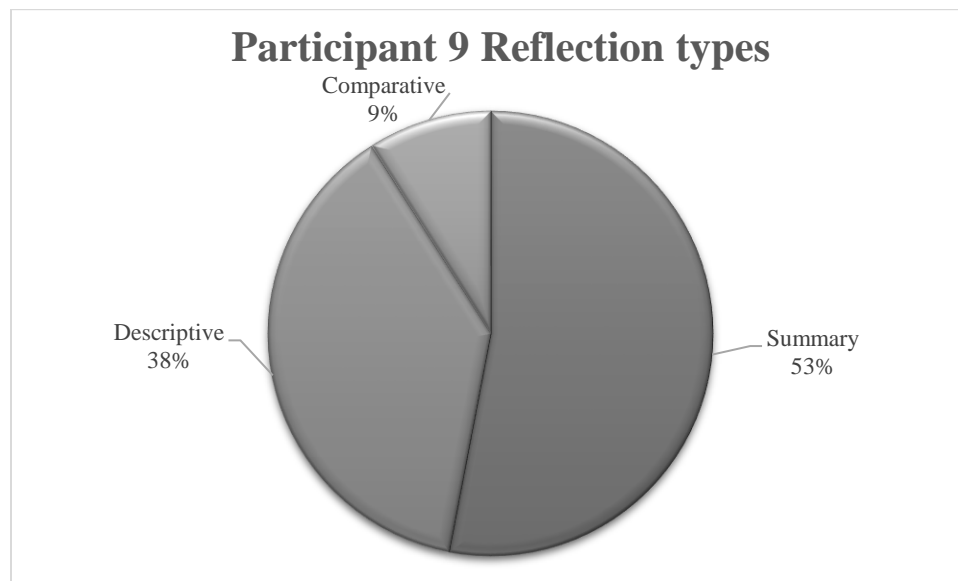
Even though Participant 3 reflected primarily on a specific type of reflection (summary), she thought reflection was helpful for her as she realized that she learned to develop her teaching practice by using reflection as a tool.

Participant 9

Participant 9 had mixed feelings about reflection. She realized that reflection was useful for her teaching but also got tired of its redundancy and the time it took. Her written reflections showed that she reflected mostly in the summary and the descriptive types. There was little percentage in the comparative type and no percentage in the transformative type (see figure 11.).

Figure 11

Participant 9 Reflection Types



Of participant 9's eight reflections, six were multiple types and themes, one was one type with multiple themes, and the other one was multiple themes with one type. The topic that she reflected on the most was teaching. She did not use a transformative type in her reflection. Participant 9 reported that she had mixed feelings about reflection, and she thought that reflecting with her cooperating teacher enhanced her confidence.

Mixed feeling

Participant 9 reported mixed feelings about reflection. She found that reflection assignments helped her in teaching, but it was quite redundant. She mentioned that "They were okay. A lot of times, I felt like it was a little redundant. So, but for the most part, I think they kind of helped. She thought reflection was redundant as she mentioned:

There were a lot of reflections, and some of them were kind of hard to reflect on. And you know I kind of got tired of writing reflection. But they were good for the most part, I mean. I think that when you're writing the reflections, it gives you a chance to think

about what you did, and how you want to redo it, or how you would do it differently in the future, and without writing the reflections, I don't think you think about that as much, I mean, I think you do. But to get it down on paper, I think it really helps you to see that like the big picture.

Another reason that participant 9 had mixed feelings about reflection was that she thought it took a lot of her time. She said that:

It was very time-consuming and at least for me because I'm not really a traditional student, I'm older. And I have a family I've got a little boy and I have a husband. So, it's a lot of time away from them too. So, I think that was probably the biggest drawback, but I think that overall reflections are important, and they're, they're a good way to better yourself and your understanding of your teaching and your style and your kids.

This perspective presented participant 9's perception of reflection that although she had some issues about writing reflection, she realized that it was useful for her teaching practices.

Reflecting with Cooperating Teacher Enhanced Confidence

Participant 9 stated that having a conversation with her cooperative teacher about her teaching practices increased her confidence in teaching. She said that:

She helped me a lot like figuring out what we wanted to do. But we have a lot of days where it was like the kids just weren't getting it, and it didn't really make sense to them. So, she and I sat down at the end of the day and reworked some of the things that we wanted to do in the next few days, and we worked really well together that way. And So, at the end of that unit I felt a lot better about, it because she kept saying my ideas were good, and when we would teach it to the kids they would understand it a little bit more. So, I think that that helped with my confidence quite a bit.

Participant 9 liked to reflect with her cooperating teacher as it helped her think about what she could do to revise her lesson plans.

With her like with the math just kind of sitting down and reflecting about the math assignment that we did help to guide what I wanted to teach the next day and without having to write about it and think about it, reflect about it. I don't think I would have done as much re-planning and you know, re-teaching if I have to re-teach, I think that that helps you to understand what you need to teach the kids.

Participant 9 perceived reflection assignments in various aspects. Although she planned to reflect on her future career, she would write notes to remind herself about the lesson plans instead of writing a long journal reflection. She mentioned that:

I don't think I'm going to write like long reflection, but I'll definitely think about how the lesson went that I just taught and write notes and make sure that I, you know not to do this next time or to try something different this time, and just make notes and make sure that I think with those someplace where I'm going to see them in my lesson plans.

Even though Participant 9 saw some benefits of reflection, she did not think she would spend a lot of time reflecting on her own practice because it was time-consuming and redundant. As her reflection assignments showed that she did not use the *transformative* type of reflection at all, it confirmed that there was no strong evidence to her that reflection is very helpful to her teaching practice.

In conclusion, among four student teachers, there were no clear patterns found between student teachers' perceptions on reflection and their reflection practices. All of them realized that reflection was important and saw the benefits of reflection. They explained how they think reflection was helpful for their teaching practice in their own way. However, I found a

relationship between perceptions of reflection and reflection practices from participant 1 and participant 9. Participant 1 perceived reflection as a tool that can help her improve her teaching practices. She stated that she changed her perceptions about reflection and changed her practices as reflecting on herself made her become more flexible and support students better. In addition, she planned to continue reflection in the future. Her perceptions on reflection helped her develop her teaching practices related to her reflection assignments that she reflected on different types of reflection. Participant 9 perceived reflection as an assignment to complete. She thought reflection is okay and she could see some benefits, but she did not see how it could help her improve her teaching. This related to her reflection practices that she did not reflect in a transformative type of reflection because she did not see how reflection could help her change anything about her teaching practices. For participants 2 and 3, there was no relationship between their perceptions on reflection and reflection practices. Although both of them thought reflection could help improve their teaching practices, they reflected mostly by using a summary type of reflection.

CHAPTER V: DISCUSSION

The purpose of this study was to understand how student teachers reflected on their teaching practices and how they perceived reflection as a tool to help them develop their teaching. In this chapter, I discuss the findings by exploring the benefits and challenges of reflection assignments for student teachers. In addition, I will address student teachers' perceptions on reflection, relationships between perception and practices, and compare my findings to those from previous studies. Following an exploration of the benefits and challenges of reflection, I will discuss research and practice implications for teacher educators who engage student teachers through reflection assignments and address limitations of the study. Finally, I will discuss my own reflection experience and how it guided my thinking throughout the study.

Benefits of Reflection Assignments

Student teachers reflected on five main themes: instruction, management, relationship, learning experience, and characteristics of effective teachers. These five themes represent what student teachers were most concerned about during their student teaching experience. From student teachers' reflections and interviews, they articulated how reflecting on these topics was beneficial for their teaching practices.

Planning for Instruction

Instruction is the topic that student teachers wrote about the most because thinking about their lessons could help them feel well-prepared and ready to be in class. Planning can make student teachers feel more confident about what they are going to teach in the classroom. Student teachers mentioned that reflection allowed them time to think back on what happened in their classroom, how their CT managed to do things in the classroom, and how they planned to follow or adapt the teaching in their own way. Student teachers also took advantage of planning their

instruction by predicting what would happen in the classroom and anticipating how they could deal with it in the moment.

When student teachers reflected on their teaching experiences, it was time for them to rethink what happened in the classroom or what they discovered or learned from their own experiences. They learned some topics that students were interested in learning so they could plan to teach that topic again next time. In addition, they reflected on assessments they used with students to see if each assessment was effective. They explored how to change the assessment to match different student learning styles. The assessment helped student teachers see how students were successful in learning, and it was feedback for student teachers to see how they achieved their goals in teaching. This finding is in agreement with (Hatton & Smith, 1995; Ward & McCotter, 2004). They believed that reflection helps teachers develop their teaching as they deliberately think about action for problems with broadening perspective.

Learning Management Skills

Reflecting on management helped student teachers realize how they can prepare students to be ready to learn. Student teachers reflected on specific behaviors that they encountered in the classroom and articulated different strategies they could use to solve the behavior problems. These reflections had the potential to influence how the student teachers would deal with similar situations in their future teaching.

Student teachers reflected on classroom management particularly when they thought that they did not receive the same respect from students as their cooperating teacher did. This made it difficult for them to gain student engagement. They learned from their CT about what they could do to develop strong rapport with students in the classroom to be ready to learn. They reflected on their experiences to understand what worked or did not work well to manage the classroom.

Time management is another element that student teachers learned about from reflecting on their experience. Student teachers seemed to recognize through reflection that what they planned to teach and what they could do might have conflicts based on the time they spent on each activity. Student teachers articulated learning about how to manage their time for each lesson with more flexibility. Reflecting on the time spent in the classroom encouraged student teachers to keep track of time or prepare extra activities for the extra time they might have. Student teachers realized the connection between management and instruction. This is beneficial for student teachers because they need to manage students to be ready to learn, so instruction can take place.

Building Relationships

As student teachers worked with students directly, they reflected on how important it was to have good relationships with students. Student teachers realized that having good relationships with students helped students engage in the lessons with more interactions. Student teachers learned that the hard work and effort that they put into building good relationships with students really helped students see how much the student teachers loved and cared for them. When they had good relationships, students opened their minds and welcomed lessons that student teachers prepared for them.

Relationships with their cooperating teachers or CTs that were reflected in both positive and negative ways gave student teachers lessons to grow. Some student teachers had a good relationship with their CTs and learned much from them. They realized that having a good relationship with their CT provided a wonderful experience for them during the student teaching semester. However, student teachers who reflected that they lacked support from their CTs

articulated feeling alone during their practices. Therefore, they learned more to rely on themselves and use reflection as a tool to help them make decisions during their student teaching.

A good relationship with parents supports students' learning because both student teachers and parents would help support students at school and home. Reflecting on how to communicate with parents helped student teachers realize that there are different ways to help students get support in learning with the help of their parents (See & Gorard, 2015). They confirmed that parental involvement and interest in their child's education are related to and respond in the right ways to influence educational outcomes.

Applying Knowledge from Learning Experience

Reflecting on CTs' feedback is important for student teachers because it is another way to learn from another person's perspective, so they can think about what they did in different ways. Also, student teachers can learn from their CT's practices in the classroom and reflect on if they can do the same thing, it is a good practice for them at all, or how they can apply it in their teaching in the future.

Student teachers reflected on what they experienced in the classroom and what they learned from their practices. Student teachers had time to understand how their experiences taught them and realize what they learned. Student teachers reflected on what they learned from their own reflections. Some of them realized how useful reflection was as they relied on their reflections to plan lessons and prepare materials or appropriate teaching to meet their student's needs.

Cultivating Effective Characteristics of Teachers

Student teachers reflected on characteristics that help support students in their learning because they know that if they have some characteristics of effective teachers, they will be able

to help students to be successful in the classroom. They reflected on how they could support students by understanding that students are diverse, and they need to make every student feel that their voice is heard and make them know how teachers care for them.

As student teachers realized that their plans can be changed due to different factors, they articulated that flexibility is a good characteristic. They learned that even though they had planned the lesson very well, it may not go exactly as planned. If they can be flexible when unexpected situations come up, then they can adapt their lessons according to students' needs and interests. Student teachers also realized that once they take charge of the classroom, it's important to be confident in themselves and in the lesson that they planned for students. Reflecting on themselves to see if they have characteristics that teachers should help them develop themselves to be effective teachers.

Challenges of Reflection Assignments

Reflection assignments are a tool to help teacher educators to support student teachers to learn to reflect. Researchers developed typologies of reflection to provide different types of reflection for preservice teachers to broaden their perspectives in reflecting (Jay & Johnson, 2002; Ward & McCotter, 2004). However, there are challenges to designing and implementing reflection assignments that support deep reflection that leads to improved practice. These challenges include definitions of reflection, perspectives on reflection, and designing tasks for reflection.

Definition of Reflection

According to the findings from this study, student teachers have various definitions of reflection. Throughout the teacher preparation program, they were required to submit reflections from various professors with varying goals or expectations for each course. During the four

interviews I conducted with student teachers, I questioned how they were taught to reflect. Some student teachers responded that they were assigned tasks in various ways that either made them understand reflection as an assignment or made them believe it is a waste of time and not worth doing. In their reflection, some student teachers did not reflect on their teaching practice. They reflected on the course reading that was assigned to them each week. This demonstrated the importance of teacher educators assisting student teachers in understanding the purpose of reflection and what they can do to reflect on their teaching practice in order to improve it (Rodgers, 2002; Ulusoy, 2016). They suggested that there should be discussions with the preservice teachers about the qualities of good reflections during the field experiences such as the definition of reflection or the process of reflection so that teacher educators do not encounter unsatisfactory outcomes.

Perspectives of Reflection

In chapter 2, it was mentioned that “perspectives on reflection” and “types of reflection” are used interchangeably. The different types of reflection used by student teachers helped me understand how they expressed different perspectives on a particular issue. Reflecting on multiple perspectives assists student teachers in understanding a particular issue from various viewpoints. The findings revealed that student teachers reflected the most by using “summary” writing. They report on general situations or summarize what happened in their classroom. Although this is the beginning of how they can continue to describe more details of the events that lead to different types of reflection later, it is preferable if they are supported to reflect from various perspectives, because They can examine a problem from differing viewpoints and have sufficient evidence to support the best practice that they will use to solve it. Student teachers reflected less on “descriptive,” “comparative,” and “transformative” reflection than on

“summary” reflection because these types of reflection require more details from student teachers. To make it a descriptive reflection, they must identify problems and solutions, compare or connect to theories to make it a comparative reflection, and provide evidence that they have changed their perception or practice to make it a transformative reflection.

For example, the topic student teachers reflected on the most was “Instruction,” and this topic was primarily reflected on in a “summary” way. Because how to teach, plan, or assess are things that happened and came to mind easily when student teachers were asked to reflect on their teaching practices, instruction is the most direct thing that student teachers could reflect on. Student teachers simply explained what they did during lessons or reported on what occurred in their classrooms. However, if they had considered this issue from numerous perspectives, they may have learned more from their experience and discovered ways to improve their teaching. Teacher educators could assist them in reflecting from various perspectives on any issue they reflect.

Designing Tasks for Reflection

One of the challenges for reflection assignments is designing reflection tasks. Reflection tasks should not be too narrow or specific for student teachers or too broad that they do not know where to focus. In this study, I provided different guiding questions for the first two participants to reflect on each week. Similarly, the other 13 participants received specific prompts from the course professor to reflect on every other week. The findings on reflection structures indicated that designing reflection assignments for student teachers may facilitate them in focusing on their teaching practices.

Structures of reflection are the combinations of themes and types of reflection expressed by student teachers in their oral and written reflections. I found four structures from the analysis

of student teachers' reflections: multiple types and multiple themes, one type with multiple themes, multiple types with one theme, and one type and one theme. The various structures discovered in student teachers' reflections demonstrated their focus each time they reflected.

Most reflections included *multiple types and multiple themes* in a single reflection. It was a structure that was mostly used by all 15 participants in their reflections. This confirmed that student teachers had multiple concerns in their teaching practice at any given time. They reflected on multiple themes by using multiple types of reflections but because they focused on various issues, they only discussed each issue on a surface level. This can be advantageous and disadvantageous to them in various ways. On the plus side, they can recall various events that occurred in their class. However, they may not thoroughly investigate or consider each issue, especially when there are limitations placed on the length of assigned reflection task by instructors.

The one type and multiple themes structure was found when student teachers used only a *summary* type of reflection when explaining various topics in one reflection. Other types of reflections (descriptive, comparative, and transformative) were not found in this structure because student teachers focused on different topics, and it might be difficult to think more insightfully in different perspectives for each issue they mentioned.

Student teachers used the structure of *multiple types with one theme* when they focused on only one topic in their reflections but used different types of reflections to describe their thoughts. When student teachers concentrated on a single topic, they examined it more closely and from various perspectives. This structure can benefit student teachers because focusing on one issue allows them to look at a specific problem from various perspectives. If student teachers reflect on one problem from various perspectives, they will have the potential to make a

reasonable decision to solve a certain problem. When student teachers compare different ideas by using logical evidence from what they experience, it might help them take action that improves their teaching practice. The findings showed that student teachers reported the benefits of reflection when they realized how it helped them change their practice to develop their teaching.

One type and one theme was the structure that I found the least from student teachers' reflections. I found this structure when student teachers reflected on one topic in a summary type. This structure was found when student teachers reflected on their teaching practice in a relatively short writing that lacked details. This is one factor teacher educators should consider when determining how long reflection assignments should be. As a result, student teachers will attempt to meet the requirements by writing longer, more detailed reflections.

Student teachers demonstrated their focus on issues that occurred in their teaching practice differently using different structures found in their reflections. Teacher educators can help by assigning tasks that require student teachers to concentrate on a single issue each time. Designing reflection tasks to help students focus on a specific issue for each assignment may help student teachers reflect on a specific issue from various perspectives.

Student Teachers' Perceptions on Reflection

Student teachers' perceptions on reflection are divided into two main categories; reflection as a process and reflection as an outcome. Student teachers' perceptions on reflection helped students reflect in different types.

Reflection as Process

Student teachers think reflection helped them to look back on what happened in their teaching practice and see the big picture of what they did. They can use their reflection to learn

what they did by using the information to form new knowledge. As they reflected on what students needed, they could plan the lesson specifically on their needs.

The processes of looking back, learning from experiences, and planning for the future happened during the reflecting time when student teachers were thinking about their teaching. Their perceptions on reflection were seen from how they explained in their reflections and during the interviews that they realized how these kinds of processes helped or supported their teaching practices. In addition, some student teachers mentioned that they did not only reflect on their teaching when they were writing reflections but also at the time of teaching or what Schön (1983) called “reflection-in-action.” Therefore, they reflected at that time of teaching and tried to find a way to solve the problem at the moment based on what they had reflected on before in their previous reflections. Some student teachers wrote that they reflected when they had time alone with themselves and did not only reflect when they had to write reflection assignments. They realized that reflection is a process that helped them think about their teaching and how to improve their teaching practices.

Reflection as Outcome

Student teachers see reflection as a useful tool that provides them with satisfying outcomes. They realized that reflection helps them improve their teaching practices. Student teachers saw reflection as a tool to help them become better teachers because it helped them realize what worked well and what did not work well in their class. This way student teachers learn to improve their own teaching. Student teachers had time to consider how they could do a better job of what they experienced in the classroom.

Student teachers recognized how their mindsets shifted as they practiced reflecting during the semester, they understood how reflection is useful in their teaching practice and changed

their mindset about reflection. They realized that reflecting with others helped expand their perspectives by learning other people's ideas. They can see things in more dimensions. They can take good advice from their CTs or their peers to improve their teaching. Apart from the change in perspective, some student teachers reported that they changed their practice. They managed students' behavior better because they reflected on the same issue again and again. Student teachers used different strategies until they found the one that worked and because of how they changed their practice, it helped solve some problems in students' behaviors.

In conclusion, both the reflection as a process and reflection as an outcome are positive perceptions on reflection and showed how they think reflection is a useful tool to support their teaching practices.

Relationship between Perceptions and Practices

Even though all four participants who were interviewed perceived that reflection was beneficial in some way for their teaching, one participant acknowledged the drawback that reflection was time-consuming. Each participant identified how they thought reflection supported their teaching practices in various ways. In addition, I found a relationship between their perceptions on reflection and reflection practices from participants 1 and 9. There was no relationship between their perceptions on reflection and reflection practices from participants 2 and 3.

Participant 1 indicated how she saw herself change because of reflecting on her teaching practices. She realized that she had changed her perception on reflection, and she used different types of reflection in her reflection assignments. Before she did not see the benefits of reflection but looked at it as a tool to criticize people. Then, she understood that reflection was a helpful tool to reflect on her teaching practice and learned to improve her teaching. She could give

honest feedback to herself and develop her teaching practices. In addition, she planned to continue to use reflection in her future teaching. When she saw the benefits of reflection, she kept reflecting in different perspectives and as a result, she could improve her teaching based on her reflection.

Participant 2 mainly wrote her reflection in a “summary” way. She had a major concern that she did not have enough support from her cooperative teacher. This issue gave her both positive and negative outcomes. The positive side was that she relied on herself a lot by using her reflections to guide her plan or teach the lessons as she did not have her CT to consult. However, the negative side is she lacked perspectives from other people to expand her ideas and it was shown from her reflections that she mainly reflected in a summary way. She also mentioned that she needs more practice to be more reflective and she hopes that if she has an opportunity to reflect with other people, she might get more perspectives and reflect in different perspectives.

Participant 3 confirmed that she liked to reflect with other people including her cooperative teacher and her friends. She loved to share teaching ideas and learn from other people’s ideas. She reflected on those ideas and realized some ideas would not match her students. She had her concern about students’ behavior, and she kept reflecting on the same issue during the semester. Finally, she found a solution to help her with this problem. Her reflection assignments showed that she mostly used “summary” writing in her reflection. This participant is an example of a student teacher who perceived reflection as a useful tool to improve her teaching. During the interview, she showed her desire to continue reflecting in the future practices because she could see the benefits of reflection. However, her reflection practices did not represent that she looked at the problems from various perspectives. This could be possible that this student teacher reflected on her teaching in her mind but did not write everything on her

reflection assignments. Therefore, when I analyzed her reflection assignments, she mostly reported in a summary way.

Although participant 9 thought that reflection was important, she described it as an assignment that was time-consuming. She stated that she did not plan to spend a lot of time reflecting in the future. She mentioned some benefits of reflection, but her overall perceptions represented that she could not see how reflection could help her improve her teaching. Her reflection assignments showed that she mostly used “summary” writing and did not use “transformative” type in her reflection. As she perceived reflection as a time-consuming assignment, she might not spend enough time to think through a problem or write enough details to see it from different perspectives. In addition, the transformative type of reflection did not appear in her reflection. It can be inferred from her reflections that she did not see how she could change her practice to improve her teaching.

In conclusion, three of the four participants perceived reflection as a useful tool to help them develop their teaching practices. However, their reflection practices showed that not all participants used various types of reflection. Only one of them used different types of reflection in their reflection assignments. The other three participants mainly used “summary” writing in their reflections. Some other factors impacted student teachers to reflect differently apart from their perceptions such as the support from their cooperative teachers or the reflection happening besides reflection assignments.

Comparison to Previous Studies

The findings showed that the ways student teachers reflected were related to previous research in that the main types of reflection in their oral and written assignments were summary and descriptive reflection. Comparative and transformative reflection were found less than the

first two types of reflection. Hatton and Smith (1995) proposed that technical or summary forms of writing can be a beginning point for student teachers to address their concerns and encourage them to move from the basis to understanding and using the other types of reflection. They also believed that comparative and transformative types of reflection require knowledge and experiential bases that take some time to develop. Ward & McCotter (2004) suggested that beginning teacher reflections reinforce the fact that attaining the goal of transformative reflection is unusual and difficult. This is why it would be helpful for teacher educators or student teachers to use rubrics for reflection to serve as some of the scaffolding. Rubrics with various types of reflection would support student teachers in evaluating, understanding, and improving their own reflections. In addition, teacher educators should model the process and they need to see student teachers use it.

This study's findings align with previous studies in terms of types of reflection found from student teachers' reflections, which summary and descriptive are the types that were found the most). However, apart from types of reflection, I found that the structure of reflection that student teachers used the most was "multiple types and multiple themes" which means in each reflection, student teachers discussed various issues by using different types of reflection to describe different events. When they focused on many issues, they were not able to look at each problem closely from different perspectives but only reported various problems in a superficial way. Instead of reporting many issues, student teachers should focus on a specific problem and reflect on it from various perspectives. Therefore, encouraging student teachers to focus on one issue at a time might help them in focusing one issue more deeply. Teacher educators might help them by providing reflection assignments that help them focus on a specific issue each time. For example, one student teacher reflected on instruction in a summary way and management in a

descriptive way. She reported on each issue without enough details to consider multiple perspectives. If reflection assignments were designed to help student teachers focus on a specific issue, student teachers might think through the concern more deeply and see various perspectives on the problems by using multiple types of reflection.

In addition, the findings showed that each student teacher has a unique way of reflecting on their teaching practice. Looking across the written and oral reflections of each student teacher made me realize that each student teacher had their own ways of reflecting and no matter what types or themes of reflection they used, most of them articulated that reflections helped them improve their teaching practices. Some student teachers spent almost all semester reflecting on the same issue with different types of reflection and finally found a solution to the problem at the end of the semester, whereas some of them reflected on a specific issue in one reflection and figured out the root of the problem and a solution. Thinking about the situation over time seems to help some student teachers gain insights on a specific issue and realize how they need to change their perception or practice to develop as a teacher. Therefore, there are more factors for student teachers to be able to reflect besides giving them rubrics or guiding questions to reflect. For example, student teachers have different concerns in their teaching practice and using the same guiding questions with all student teachers might result in different responses. Student teachers who thought the guiding question matched their situation could reflect on that issue deeply with more details than student teachers who had not experienced the same issue in their class. As teacher educators can help guide student teachers to reflect on their teaching practice, each student will ultimately determine which way they feel most comfortable using reflection in their own ways. Paying attention to the structure of student teachers' reflections confirmed that

student teachers who reflect on specific aspects of their teaching practice by considering different perspectives develop their teaching practices and see the benefits of reflections.

In conclusion, teacher educators should encourage student teachers notice the relationship between reflection and teaching practice. As student teachers realize that reflection is not only assignments for them but can really help them in their teaching practices, student teachers will understand the benefits of reflections. The purpose of reflection is to allow student teachers to think about their own practice and see different perspectives on their own teaching and how they can improve their teaching. However, it is a skill that requires time to practice. When student teachers start to see the benefits of reflection themselves, they will want to continue reflecting on their own teaching to develop their practices in a lifelong process.

Implications

In this section, I will discuss the implications that this study has for student teachers, teacher educators, and teacher education programs. I will also discuss implications for future research on preservice teacher reflection.

Practical Implications

For practical implications, I will discuss four implications: implications for teacher educators, implications for teacher preparation programs, implications for cooperating teachers and implications for student teachers.

Implication for Teacher Educators

The findings show that student teachers mostly reported their reflections by using a *summary* type. In addition, the structure of reflection that was found the most *was multiple types and themes*. It confirmed that student teachers reflect on various issues but did not focus on each issue from various perspectives. Teacher educators who want to encourage student teachers to

reflect in various perspectives such as *descriptive, comparative, or transformative* might start by providing a clear definition of reflection and introducing them to understand what a meaningful reflection looks like (e.g., focus on one issue and consider it from multiple perspectives). In designing reflection assignments, teacher educators can support student teachers to understand the definition of problems for reflection (Dewey, 1933), so that they can reflect on their problems in ways that will lead to possible solutions that they can try in practice.

When we talk about the word “problem” and ask student teachers to reflect on problems they encounter in the classroom, they might be afraid that it will be bad for their mentor or supervisor to see what negative issues happen in their classroom. Dewey (1933) defined a problem as a perplexed, trying situation where difficulty can be located and defined. Therefore, teacher educators can provide knowledge for student teachers that problems are a natural part of teaching and that thinking through the problems that occur in the classroom might help them see the root of the problem and consider it more clearly before they can find the appropriate solutions. They will understand themselves and their students better and learn how to support students based on their reflections.

It might be easier for student teachers to reflect on what happens in the classroom if they view challenges as a natural way of life that happens to everyone rather than as a problem in a negative sense. Problems can be viewed as natural occurrences and as a method to comprehend issues from various angles rather than as something that everyone should avoid. In this way, a problem is not seen as something negative but as the originality of thought where we can start to reflect to find the way to a solution. Student teachers who perceive problems as a reality or as common situations that happen in the classroom can reflect on what happens and how they can

improve their teaching practice without the perception of consequences for being imperfect that often accompany student-teacher evaluation.

Implication for Teacher Preparation Programs

The findings showed five themes that student teachers reflected on the most. It means that these five themes are the topics that student teachers are concerned about the most during their teaching practice. This is useful for teacher preparation programs as we can provide student teachers with knowledge from their concerns so they can be prepared for future teaching.

Student teachers reflected on the sub-theme “teaching” under the theme “instruction” the most. Student teachers reflected on their teaching the most, which confirms that they still need support in teaching even though this might be what they are supported the most during the program. For example, one student teacher wrote in her reflection that she wants to know “how to best support students in your classroom with varying abilities when you don’t have a co-teacher.” Student teachers’ reflections showed that some situations might happen in their classroom that they did not know how to deal with them.

Implication for Cooperating Teachers

From the findings, student teachers articulated that reflecting with their cooperating teachers helped them see a problem from different perspectives. In addition, some student teachers confirmed that a lack of support from their cooperating teachers resulted in a lack of guidance for developing their teaching practices. When student teachers reflect with others, they may compare different ideas and determine which aspects can be applied in their situation. Cooperating teachers can provide opportunities for student teachers to share their teaching experiences with them in order to give them feedback or share different ideas.

Implication for Student Teachers

Student teachers can use these different types of reflection as a guide to reflect on their teaching practice. It can be a guide to help them think about an issue from different perspectives and help them reflect on their teaching practice to develop themselves. In addition, student teachers can learn to reflect on their reflections. This can be one of self-directed learning for student teachers as they learn from their own experiences. If they analyze their own reflections, they will see what issue concerns them the most and how they can overcome each problem. When they learn from their own mistakes or what they did in the past, they will realize what they can do and develop themselves to be better. They can use reflection as a tool to evaluate themselves to make them see how they change themselves.

Another way student teachers can think about reflection that could support them to develop their reflection practices is by considering contemplative practices. The idea of mindfulness in education such as meditation or contemplative practices may be useful for student teachers because it will help them pay attention in the present moment without judgments. According to Powietrzyska and Noble (2018), meditation teaches you to pause and make room for self-awareness. Writing may be seen as a mindful activity since it requires pausing and focusing on a single task. It provides an opportunity for deeper thinking through connecting with and gaining additional insight into one's internal self. Student teachers might realize that by being mindful, they would be aware of their students' feelings and how important they are (Tremmel, 1993). They might show more empathy and understand students who have different backgrounds or have different needs or interests. It may make them transform their own teaching practice in the classroom to help students learn better or find appropriate methods to serve diverse students. Therefore, by writing reflection assignments, student teachers will have

time to be with their own self and focus on themselves and their practice. This might help them reflect on what they experience in the classroom.

Research Implications

For research implications, I will discuss four implications: observation phase, groups of participants, duration of time to collect the data, and incorporation of Contemplative practices.

Observation Phase

For research implications, the observation phase should be added to the future research to gain different perspectives from the study. Further research can be done on reflection by adding an observation phase to the research methods where the researcher can observe student teachers' class. Then, the researcher can see if student teachers' practice in classrooms matches what they learn from reflections. The researcher can observe to see how student teachers apply solutions to the problems they reflect on in their real classrooms to see relationships more clearly between student teachers oral and written reflections and their practice in the actual classroom. In addition, they might show reflection-in-action or how they change in their practices.

Groups of Participants

Different groups of participants will provide different findings. The participants of this study were from two majors: early childhood and elementary education. Student teachers from different programs might have different perceptions on reflection and it is useful to study how they reflect differently.

Duration of Time to Collect the Data

This study was conducted during the student teaching semester which was 16 weeks. As reflective practices are a process that student teachers need more time to practice, the duration of

time to collect the data can be extended to one year or more. In addition, it might be helpful to follow to see how they continue to reflect in their first year of teaching.

Incorporation of Contemplative Practices

Future research can be done by incorporating contemplative practices in a process of reflection. Contemplative practices can be introduced to student teachers as it helps them focus on what they are doing (Tremmel, 1993). For example, meditation might help them return to the present moment. When student teachers can pay attention to themselves, they might be able to reflect on their teaching practices with undisturbed mind that might help change how they reflect on their teaching experiences.

Limitations

In this section, I will discuss four limitations of the study; reflection assignments, measurement, time, and participants.

Reflection Assignments

This study used reflection assignments to study student teachers' reflections which might not show all the students' reflection processes that they might do during the day or other times that they do not write down. When I refer to reflection in this study, it means the data that I got from student teachers oral and written reflection assignments. In addition, setting length limits on reflection assignments to one to two pages which I did in this study may not be enough for student teachers to write everything happening in their minds. There could be some social desirability (Millham & Kellogg, 1980) in reflections when student teachers did only frame issues themselves but also frame them for others. Reflections were submitted to their supervisor so they wanted to present their teaching practices in a favorable way so they can be viewed in a positive way.

Measurements

Structures (themes and types) of reflections used for the analysis in this study is one way to measure the quality of reflection. To categorize types of reflection, it requires elements of evidence that are present in each reflection. Student teachers might reflect on something in their mind but did not write it in their reflection. When I used the types of reflection for analyzing student teachers' reflections, I followed rubrics to categorize their reflection in a specific type based on the evidence found in their reflection. Although rubrics were used to measure the quality of reflection in this study, I suggest that it can also be used as a guideline for student teachers to reflect from various perspectives.

Time

Reflection is an ongoing process. Student teachers' reflections in this study were collected during the student teaching semester which was 16 weeks. Future research might consider collecting preservice teachers' reflections over a longer period leading up to student teaching or continue collecting the reflection data into teachers first years of teaching.

Participants

Participants in this study do not represent all the student teachers in all programs. The study only focuses on how these 15 participants from early childhood and elementary majors reflected during their student teaching semester, so the analysis is limited to this study and cannot be generalized to represent all student teachers. In addition, all of the participants are female, and the majority of the participants are white. These characteristics might make this study less generalizable.

Researcher's Reflection Experience

In this section, I will discuss my experience with reflection while conducting the study. I will discuss my reflexive journal, experience on meditation, and reflecting with my advisor.

Reflexive Journal

In this section, I describe my personal experience with reflection during the research process. I will explain how I experienced and understood the process of reflection myself. During the research process, I wrote reflective journals to myself on the problems I encountered in each phase of the research process.

First, I reflected on what I was doing and felt happy that I was doing it. For example, on April 10, 2022, I wrote in my reflective journal:

I am proud of myself that I chose to conduct my research on this topic. Reflection is important in helping student teachers to improve their teaching practice. Reflective skills also help them to be aware of themselves in other areas in their daily life which is the beginning of how they can develop themselves in other ways. When we realize who we are, and what we do, we will know what we can do, change, or make our life better.

During data collection, I reflected on how I planned to select participants. Also, when I did not get enough participants, I reflected on what I could do to get more participants. During data analysis, I reflected on the methods that I used. I reflected on how I could manage to analyze this data based on my research questions and methods. It is a session for me to make sense of the data I had before starting the process of data analysis.

My reflection during the process of analyzing student teachers' written reflections helped me realize that the themes I found could be clarified by including subthemes, I was reflecting to myself if each category matched the data I presented. I learned from my reflections that it was a

difficult to process all the data, and I had to be patient to organize the data I had and did not need to rush. I needed to be careful enough in my analysis of the data for the findings to be trustworthy. For example, during this time, I wrote that:

I had thought that analyzing the data would take a lot of time. However, when I started to do it, it even took longer time than I expected. It is just not that you read the data and try to put them in categories, but you need to practice deep reading, and then this process makes me understand student teachers more about their reflection process. They were asked to reflect on their teaching in one to two pages that might not allow them to write enough information or everything that they would like to talk about. As a researcher and I have to analyze their data and put in each category, it might not represent their real process of reflecting what was happening in their mind. The written reflection might limit their ability to present all of their reflection processes. Then, I find it hard to categorize student teachers' reflections in each category. Sometimes I thought that all of their written reflection did not represent all reflective thinking processes happening in their mind. For example, some student teachers were writing about problems and solutions that they found useful in their teaching, but they did not write about the reasons why they chose the specific method in their teaching and how they related the theory to their practices. As it is not evident in their written reflection, I categorized this piece of information as a descriptive reflection as it presents "problems and solutions". I cannot say that even though student teachers did not write about the "reasons or refer to the theory", they might reflect on that in their mind but did not write it. Therefore, I cannot categorize this piece of information as a comparative reflection. (May 30, 2022).

Reflecting on my process of analyzing the data made me understand that there is a limitation for using the rubrics in analyzing the data and also another limitation is the length of student teachers' reflections that did not allow them to write everything happening in their mind but at least I know that student teachers reflect on their teachings, and it helped them in their teaching practice, so I will do what I can do to help them realize how reflection is useful for their teaching.

I also reflected on the rubrics that I used for categorizing the data. After I analyzed a few student teachers' reflections I found that most of the data I had did not match three types of reflection that I have (descriptive, comparative, and transformative) so I decided that I needed to add one more type of reflection to my rubrics. I added "summary" as a new category for analyzing student teachers' written reflection. In addition, I found that some explanations of the rubrics did not cover what should be included and the reflection on the rubrics helped me in revising the rubrics to be completed. For example, I wrote that:

Transformative reflection is not necessary to be only the change of practice that student teachers thought they changed something in their teaching, but also it can be a change of perception or attitude towards some issue. Therefore, I should add more explanation to the transformative reflection category. For example, one student teacher changed their attitude towards reflection. She changed her perception to see the benefits of reflection as she used to think that to reflect on teaching with her mentor was being criticized by someone else and she did not like being criticized. (May 27, 2022)

I reflected on what can be the factors that made student teachers reflect in different ways. I was thinking that guiding questions might lead students to reflect in different ways. For example, student teachers who get the prompt from the course instructors that they should write

about a challenge they face in the classroom wrote about problems and solutions to answer that question. However, they stopped their reflection once they already answered the prompt, so they did not reflect from different perspectives on the issue. In addition, based on what I found from the data analysis, different students have different responses to the same guiding question. Even though they were asked to reflect on the challenges they have, some of them did not explain enough details about specific issues. Therefore, different students reflected on different guiding questions differently. And then that might be the responsibility of teacher educators to help scaffold their ideas to reflect on guiding questions in multiple dimensions. For example, I wrote that:

I have learned that analyzing the data does not only make me see the results of the data that I collect just to report it to the study, it also makes me understand more on bigger picture on my research what I'm doing can be interpreted in different ways than I was expected. For example, I used to think that prompts or guiding questions might help students to reflect better. When I analyzed the data, I learned that even student teachers got the same prompts or questions, they did not reflect in the same way. Some might not reflect in four kinds of reflection while some reflect on four types of reflections.

However, going back to my first thought, it does not matter how students reflect on how many types of reflection. It matters how they make use of those reflections, and they think reflections help them know more about themselves and their students so that they can develop their lessons to meet their students' needs and made the teaching and learning process respond their students' needs the most. (June 22, 2022).

Reflecting with myself before the interviews helped reduce the stress and nervousness because I had time to plan my to-do-list for the interviews to make sure that I did not forget

something during the interview. For example, I had to set the time for the interview because I did not want to spend more time on the interview than I had told participants or to remind myself to ask them if they would like to continue our conversation even if we are reaching the time limit. After each interview, I spent time reflecting on what I did with each participant. I wrote what I could develop for the next interview. For example, after the first interview, I wrote that:

I do not really have time to think about the answer to ask more follow-ups questions.

Next time I should not hurry and only think about finishing all prepared questions but I should listen to what student teachers say more carefully and ask them questions based on what they talk. Also, if the participants did not give specific answers or answer in too general and I think I do not get enough information, I should ask them to be more specific about their answer.

This reflection helped me in the next interviews. For example, after the second interview, I wrote in my journal:

Today I did a great job on time management by asking the participant's permission before the interview to let them know that if we need more time to finish the conversation, the participant will let me know if they want to continue. Therefore, this time we spent about 40 minutes asking all prepared questions and also have time to ask follow-up questions based on the participant's answers. They also have enough time to give a clear explanation for their answer. So, I got everything that I need with more relaxing atmosphere for the interview. (April 20, 2022).

I also reflected when I was writing chapters. By reflecting during the process of conducting the research, I learned to rely on myself and practice making decisions logically. When there was a problem occurring during the study, I spent the time reflecting on myself by

writing possible solutions that I can do to solve the problems and I learned to be flexible on analyzing the data. For example, after I finished analyzing the data and found out that it was not what I planned to see, I learned to admit it and find another way to analyze the data so that I can get information to answer research questions.

Experience on Meditation

I practiced meditation during the process of this study to see if it would help me in reflecting. In the morning when I woke up, I practiced sitting still in silence for 30-45 minutes. I closed my eyes and focused on my breath. I tried to keep seeing myself breathing in and breathing out. However, different issues arose in my mind. Sometimes I allowed myself to think about them and sometimes I stopped myself from thinking and tried to get back to my breathing.

I realized that the peaceful time of being with myself without any other things disturbing me allowed me to see what was going on in you're my mind more clearly. When I allowed myself to think about something that came to my mind, it showed up as a problem that I needed to solve, and when I saw it as a problem, I then found a way to solve it.

Meditation provided me time to be with myself and helped me organize things better. I feel like it is impossible to think about anything and just look at my breathing. Instead, I used that time to think about things I needed to organize, and I allowed myself to think about what needed to be done and how I should do it. For example, I thought about the timeline that I should do the data analysis. Meditation time for me then was a time for reflecting on issues that need to be solved. Then, I wrote them down in my reflective journals and expanded on any ideas that I could think of later.

When I realized the benefits of meditation, it made me want to do it again. It is not because someone else told me that it is a good thing to do, but when I experienced the

advantages of doing it myself, I understood why I should continue to do it. In the same way, to write a reflection, if you do not see the benefits of doing it yourself, you will not understand why you must do it. When you realize how it can help you improve your teaching practice, you will want to keep reflecting on your practice to develop your teaching more. Therefore, I found that meditation helped me to *return* to focus on myself, so I am ready to *reflect* and *realize* the benefits of reflection (see figure 12).

One thing that I realized after I practiced meditation for a while, I discovered that I feel more comfortable doing it. Although I did not feel that I could meditate better or it helped me reflect better, I was satisfied with the way that meditation allowed me to have time to talk to myself and organize things in my life. Therefore, I think reflection can be similar because if you reflect on your teaching regularly, you may feel comfortable doing it and see the practical benefits of it.

In conclusion, reflection through meditation was an important part of my research process. This time allowed me to identify specific issues in the research process and consider a solution for each problem. I understand that when there are many things on my mind, I need time to put them in order to clear some issues out, to clear my mind, so I am ready for the next thing coming into my life.

Figure 12

How Meditation Helps in Reflection



Reflecting with My Advisor

In this section, I will discuss my personal experience of reflecting on my research project with my advisor. Reflecting with other people can help you elaborate ideas more clearly, and it is an opportunity to exchange perspectives on specific issues. I share my experience on how reflecting with my advisor helped me with this research.

Guidance and Recommendation on Each Process

Before I conducted the participant interviews, I met my advisor as a regular meeting. I presented the interview questions that I prepared to ask different participants based on their written reflection assignments. Reflecting on interview questions with my advisor helped me see that I should add, delete, or modify some questions to gain more information from the student teachers. For example, my advisor recommended that it is good that I prepare all questions for student teachers, but as it is a semi-structured interview, I should ask questions that follow their answers as well. My advisor also advised that I should send interview questions to participants before the day I interviewed them. This way student teachers could have opportunities to reflect on the questions themselves and might prepare what to say to me during the interview.

Before I started to analyze the data both inductively and deductively, my advisor and I were sitting together doing analysis together. Therefore, we shared the way we thought about the data, considering different perspectives on how we each looked at the data.

Sharing Perspectives

In a weekly meeting, my advisor and I did not only exchange our ideas on how each procedure went, but we reflected on our understanding of each definition that we might see in different ways. We also reviewed each research question to see if what we were doing answered each research question or what we should do to adjust our process to answer the research questions.

To show my advisor what I was doing each week, I reported what I did during this period of time which allowed me to reflect on what I did together with my advisor. There was some time that my advisor asked me to clarify some points, and I found some missing points or something that I might be able to add to my writing. For example, to write a methodology chapter, I thought I explained the procedure clearly. However, my advisor shared a perspective as a reader that I might need to explain and provide more examples so that readers understand what I want to convey. Therefore, I had many opportunities to reflect on my writing again and revise it based on different perspectives.

Asking Questions to Explore

My advisor asked me some questions each week to make me explore and find the answers to the questions. To answer those questions, I had to reflect on the questions and find a way to answer the questions by researching each issue. Asking questions was a good way to help me reflect on what I was doing and how I could further develop the ideas based on those questions to support my research.

Reflecting alone or with my advisor during the process of my study allowed me to understand what I was doing and why I was doing this research. It made me understand the benefits of reflection. I learned from my reflection to figure out how to solve problems when they occurred. I understand that reflection is a practice that requires concentration and time to focus on a specific issue in order to see it from different perspectives.

Conclusion

Student teachers reflected in different themes, types, and structures. All types of reflection helped students practice their reflective thinking. Student teachers learned from their reflections and realized the benefits of reflection. Even though some student teachers did not use all types of reflection in their reflection assignments, they learned to improve their teaching practice based on their reflection. Student teachers' perceptions on reflection confirmed that they realized how helpful reflection is. They learned how reflection helped them in terms of process and outcome. This study confirms that reflection helps student teachers in their teaching practices. Teacher educators should provide them with knowledge on how to reflect from different perspectives and how important reflection is. Student teachers can experience the benefits of reflection when they think about their teaching experiences from various perspectives which will lead them to continue reflecting in their future teaching. Reflection is an ongoing and personalized process. Once student teachers find a structure that works for them, they can keep reflecting and developing their teaching practices.

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APPENDIX A: GUIDED QUESTIONS FOR WEEKLY REFLECTION ASSIGNMENTS

Guided question for 2 participants

Directions: Select a specific situation that you experienced this week and write your reflection (1-2 pages) based on the following guiding questions. You should select any issue that you would like to share or believe is important for your own learning. You are required to give some examples of the situation that you are writing about.

There is no specific pattern or structure for your reflection. Feel free to write this reflection as your own teaching practice journal that you can have a space and time to talk to yourself about teaching. There is no judgement about your reflection. I hope you are relaxed and open to any ideas coming to your mind.

Week 1

What did you experience in teaching this week?

Week 2

What went well in your teaching this week?

Week 3

What connections did you make between learning theories and your teaching practice?

Week 4

What did you learn from your students that gave you different perspectives for teaching?

Week 5

How have you grown as a teacher this week?

Week 6

What did you wish you would have done in class this week?

Week 7

Describe a moment when you needed to make an unexpected decision in class? What did you do?

Week 8

What was the most important lesson that you have learned this semester?

Week 9

What makes you feel proud of yourself in teaching practice this semester?

Week 10

In what way do you think reflection has helped you during student teaching?

APPENDIX B: INTERVIEW QUESTIONS

This is an interview to help me understand your experiences with reflection across your teacher education program, including student teaching.

1. Please talk a bit about your experience with reflection during your student teaching semester.
2. How did you learn to reflect? Can you share some examples of classes or assignments that required you to reflect on your planning and/or teaching? Any others?
3. How has engaging in reflective thinking and writing supported your planning and teaching activities?
4. Can you give examples of when you used knowledge gained from your reflection to make a change?
5. What are the benefits and drawbacks to completing weekly written reflections?
6. How will you incorporate reflection into your future teaching?

APPENDIX C: RESEARCH QUESTIONS, DATA COLLECTION AND ANALYSIS

Research Question	Data Collection	Method of Analysis
<p>1. How do student teachers reflect on their teaching experiences?</p>	<p>Student teachers' written and oral reflection</p>	<p><u>Step 1</u> Open coding (Reflection themes)</p> <ul style="list-style-type: none"> - 5 themes and 3 sub-themes for each theme <ul style="list-style-type: none"> • Instruction (teaching, planning, and assessment) • Management (behavior, classroom, and time) • Relationships (students, cooperating teachers, and families) • Learning experiences from (cooperating teachers, practice, and reflection) • Characteristics of effective teachers (diversity, flexibility, and confidence) <p><u>Step 2</u> A priori codes (Reflection Types)</p> <ul style="list-style-type: none"> - 4 Types <ul style="list-style-type: none"> • Summary • Descriptive • Comparative • Transformative <p><u>Step 3</u> A priori codes (Reflection structures = types + themes)</p> <ul style="list-style-type: none"> - Create 60 codes from 15 subthemes and 4 types of reflection. - Structure of reflection <ul style="list-style-type: none"> • Multiple types and multiple themes • One type with multiple themes • Multiple types with one theme

		<ul style="list-style-type: none"> • One type and one theme
2. How do student teachers perceive reflections as a tool to support their teaching?	<ul style="list-style-type: none"> • Interviews with student teachers • Student teachers' written and oral reflection 	<p><u>Step 1</u> Open coding of the interviews</p> <p><u>Step 2</u> Open coding from student teachers' written and oral reflection using the data from the sub-theme "learn from reflection" under the theme "learning experience".</p> <ul style="list-style-type: none"> - 2 themes and 5 sub-themes <ul style="list-style-type: none"> • Reflection as process (opportunities to look back, opportunities to learn from experiences, and opportunities to plan for future lessons) • Reflection as outcome (improve teaching practices and change)
3. How do student teachers' perceptions of reflection compare to their reflection practices?	<ul style="list-style-type: none"> • Student teachers' written and oral reflection • Interviews with student teachers 	<p><u>Step 1</u> Review of student teachers' written and oral reflections</p> <p><u>Step 2</u> Review of student teachers' perceptions on reflection</p> <p><u>Step 3</u> Comparison between written and oral reflections and perceptions</p>

APPENDIX D: PARTICIPANT CONSENT FORM (FIRST RECRUITMENT)

Participant Consent Form

You are being asked to participate in a research study “Becoming a Reflective Practitioner: An Analysis of Student Teacher Reflection” conducted by Thunsinee Muangthong under the direction of Dr. Deborah MacPhee, School of Teaching and Learning, Illinois State University. The purpose of this study is to understand how student teachers reflect on their teaching and perceive reflection as a tool to support their teaching practices.

Why are you being asked?

You have been asked to participate because you are enrolled in student teaching in Spring 2022. You are ineligible to participate if you are currently located in the European Economic Area. You will have opportunities to reflect on your teaching experience which will benefit your teaching practice. Your participation in this study is voluntary. You will not be penalized if you choose to skip parts of the study, not participate, or withdraw from the study at any time.

What would you do?

If you choose to participate in this study, you will be asked to upload a 1–2-page(s) written reflection on your teaching experience each week to a folder that I will create and share with you on OneDrive. I will provide guiding questions for your weekly reflections. Weekly reflections are a regular student teaching assignment, so I am not asking you to do any additional work for this study. During the last two weeks of the semester, you may be invited to schedule an interview to share your perceptions on reflection and to discuss my analysis. You can choose the date and time that you are available (approximately 30 minutes) for an in-person or Zoom interview. In total, your involvement in this study will be during your Spring 2022 student teaching semester.

Are any risks expected?

We do not anticipate any risks beyond those that would occur in everyday life.

Will your information be protected?

We will use all reasonable efforts to keep any provided personal information confidential. Your written reflection will be analyzed without the use of your identifying information. Your recording for the interview will be transcribed and analyzed without the use of your identifying information. Information that may identify you or potentially lead to reidentification will not be released to individuals that are not on the research team. All data will be stored in my password-protected computer. The recordings will be destroyed as soon as the transcript is completed. Information I collect from this study will only be analyzed and reported without identifiable information of individuals. The findings from this study may be presented in part of my dissertation and may become part of a journal article or a conference presentation. In any publication or presentation, pseudonyms will be substituted for any identifying information. However, when required by law or university policy, identifying information (including your signed consent form) may be seen or copied by authorized individuals.

Could your responses be used for other research?

After your data has been deidentified, your data may be used in other research projects

Who will benefit from this study?

The benefit to your participation in this project is that you are helping me understand student teachers’ experiences in reflection, as well as encouraging you to practice on reflective skills and learn more about how reflection can support your developing teaching practice. It will benefit teacher education programs at ISU to support teacher candidates with reflective practices.

Whom do you contact if you have any questions?

If you have any questions about the research or wish to withdraw from the study, contact Thunsinee Muangthong at (309) 750-5223 or tmuangt@ilstu.edu or Dr. Deborah MacPhee at (309) 483-3836 or dmacphe@ilstu.edu.

If you have any questions about your rights as a participant, or if you feel you have been placed at risk, contact the Illinois State University Research Ethics & Compliance Office at (309) 438-5527 or IRB@ilstu.edu.

Documentation of Consent

Sign below if you are 18 or older and willing to participate in this study. By typing in your name below, it should replace your signature to participate in this study.

Signature _____ Date _____

Your signature below indicates that you agree to be recorded.

Signature _____ Date _____

You can print this form for your records.

*Please return this form by attaching this signed form and reply to tmuangt@ilstu.edu by January 20, 2022.

APPENDIX E: PARTICIPANT CONSENT FORM (SECOND RECRUITMENT)

Participant Consent Form

You are being asked to participate in a research study “Becoming a Reflective Practitioner: An Analysis of Student Teacher Reflection” conducted by Thunsinee Muangthong under the direction of Dr. Deborah MacPhee, School of Teaching and Learning, Illinois State University. The purpose of this study is to understand how student teachers reflect on their teaching and perceive reflection as a tool to support their teaching practices.

Why are you being asked?

You have been asked to participate because you are enrolled in student teaching in Spring 2022. You are ineligible to participate if you are currently located in the European Economic Area. You will have opportunities to reflect on your teaching experience which will benefit your teaching practice. Your participation in this study is voluntary. You will not be penalized if you choose to skip parts of the study, not participate, or withdraw from the study at any time.

What would you do?

If you choose to participate in this study, you will be asked to allow the researcher to access your reflections that you submit as assignments for TCH 278 once every two weeks. The reflection assignment is a part of your course requirement, so I am not asking you to do any additional work for this study. Participating in this study will not affect your course grade. During the last two weeks of the semester, you may be invited to schedule an interview to share your perceptions on reflection and to discuss my analysis. You can choose the date and time that you are available (approximately 30 minutes) for an in-person or Zoom interview. In total, your involvement in this study will be during your Spring 2022 student teaching semester.

Are any risks expected?

We do not anticipate any risks beyond those that would occur in everyday life.

Will your information be protected?

We will use all reasonable efforts to keep any provided personal information confidential. Your reflection will be analyzed without the use of your identifying information. Your recording for the interview will be transcribed and analyzed without the use of your identifying information. Information that may identify you or potentially lead to reidentification will not be released to individuals that are not on the research team. All data will be stored in my password-protected computer. The recordings will be destroyed as soon as the transcript is completed. Information I collect from this study will only be analyzed and reported without identifiable information of individuals. The findings from this study may be presented in part of my dissertation and may become part of a journal article or a conference presentation. In any publication or presentation, pseudonyms will be substituted for any identifying information.

However, when required by law or university policy, identifying information (including your signed consent form) may be seen or copied by authorized individuals.

Could your responses be used for other research?

After your data has been deidentified, your data may be used in other research projects

Who will benefit from this study?

The benefit to your participation in this project is that you are helping me understand student teachers’ experiences in reflection, as well as encouraging you to practice on reflective skills and learn more about how reflection can support your developing teaching practice. It will benefit teacher education programs at ISU to support teacher candidates with reflective practices.

Whom do you contact if you have any questions?

If you have any questions about the research or wish to withdraw from the study, contact Thunsinee Muangthong at (309) 750-5223 or tmuangt@ilstu.edu or Dr. Deborah MacPhee at (309) 483-3836 or dmacphe@ilstu.edu.

If you have any questions about your rights as a participant, or if you feel you have been placed at risk, contact the Illinois State University Research Ethics & Compliance Office at (309) 438-5527 or IRB@ilstu.edu.

Documentation of Consent

Sign below if you are 18 or older and willing to participate in this study. By typing in your name below, it should replace your signature to participate in this study.

Please type “YES” in the blank for the information that you would like to share

_____ I would like to share my reflections for the study.

_____ I am willing to be contacted at the end of the semester for the interview about reflection and agreed to be recorded for the purpose of the data analysis.

Signature _____

Date _____

You can print this form for your records.

*Please return this form by attaching this signed form and reply to aguesen@ilstu.edu by

February 15, 2022.