THINKING ABOUT TEACHING: DOES A STUDENT TEACHER IMPACT THE REFLECTIVE PRACTICES OF A COOPERATING TEACHER?

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ABSTRACT
With the current movement toward evaluation of teachers based on student growth measures, this qualitative study was conducted to learn if the presence of a student teacher in the classroom of an in-service teacher improved the reflective practices of the in-service teacher. Rodgers' (2002) definition of reflection was used as the theoretical framework for the study. Five teachers participated in a pre- and post-survey. In addition, four of the five teachers who participated in the surveys also participated in an interview. The results of the study were inconclusive. All of the in-service teachers felt the presence of the student teacher made them more reflective; however, the data did not indicate a change in the reflective practices of the teachers due to the presence of the student teacher.
Keywords: Reflection, teacher improvement, teacher evaluation

INTRODUCTION

The K-12 educational world has made the shift to evaluations of teachers based on student growth in the classroom. The National Council on Teacher Quality (2016) found over forty of the United States' educational programs currently have some variation of student growth incorporated into teacher evaluations. Like most of the nation, Ohio has implemented the Ohio Teacher Evaluation System (OTES) to measure teacher effectiveness using student growth as a large portion of the teacher evaluation. Ultimately, the OTES guarantees teachers will be evaluated, in some part, based on the performance of their students' performance on future assessments. Teachers are now more aware of student performance on these assessments as their personal teacher evaluation will reflect the student growth on the assessments. Under the premise of a reflective teacher is a more effective educator (Dewey, 1910; Schon, 1983; Schon, 1987; Adler, 1990; Mezirow, 1990; Hargreaves & Shirley, 2012), a presumption can be made that OTES should cause teachers to examine methods to improve their teaching ability and practices. With the presumed impact on teacher desired improvement due to OTES, the opportunity preservice teachers provide, and the benefits of reflection in mind, this study examined the impact a student teacher has on the reflective practices of a cooperating teacher.

Rationale & Significance of the Study

Upon the researcher's discussions with the five cooperating teachers who were not likely to accept another student teacher due to the implementation of OTES and their concern for a student teacher negatively impacting their evaluations, the researcher began to be concerned pre-service teachers would not receive the appropriate opportunity to work within a classroom. Hertzog and O'Rode (2011) pointed out, "The student teacher experience has been identified as one of the most influential factors in preparing beginning teachers" (p. 90). Without current teachers working with student teachers, the student teachers will have limited opportunities for individual growth as they prepare to enter the field as professionals after graduation. With the expected growth and measurable effectiveness of educators due to OTES, there seemed to be an opportunity for student teachers to impact the reflective practices of practicing teachers. In addition, the premise of a reflective teacher is a more effective educator (Dewey, 1910; Schon, 1983; Schon, 1987; Adler, 1990; Mezirow, 1990; Hargreaves & Shirley, 2012) provided a great opportunity to examine if the student teacher impacts the reflective practices of a cooperating teacher.

LITERATURE REVIEW
Reflection

As the study focused on reflection, it is necessary to understand how reflection has changed and impacted current practices. Reflection became an integral aspect of education with *How We Think* (1910). In the text, Dewey defined reflective thought as "Active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it, and the further conclusions to which it tends" (1910, p. 6). In addition, he delineated two required elements for reflective thinking to occur: 1. The existence of a problem or issue at hand and 2. The search, investigation, or evaluation to understand the facts to support or nullify the belief at hand (Dewey, 1910). Over the years, Dewey's foundation was misapplied or practiced incorrectly (Kompf & Bond, 1995). Thus confusion for educators and theorists existed on how to apply Dewey's theories. Schon (1983, 1987) moved reflection forward as she delineated methods professionals can

use their implicit knowledge and learn from experiences. In addition, Shon delineated two types of differing reflection: reflection-on-action and reflection-in-action (Schon, 1983; Finley, 2008).

In Schon's (1987) reflection-on-action, the individual comes across a situation or unexpected outcome happened in the past and the individual is revisiting it in the present and the reflection has no bearing or direct connection to present actions. Reflection-in-action occurs in the present or a time close to present where the reflection is able to affect the situation at hand.   The thinking and reflecting affects what the individual is doing at a time when he/she is able to make a difference in the outcome (Schon, 1987).

Building upon Schon's ideas, Zeichner and Liston (1996) created five levels of reflection that directly relate to the teaching profession. The five steps are sequential and build upon the previous step. Rapid reflection is first which required instantaneous and automatic action by the instructor. Second is repair where a teacher makes adjustments and decisions in response to cues from the students. Review is third as it allowed the educator to think, discuss, or write about an occurrence. Research is next where a teacher collected data or analyzed research to allow for systematic and sustain thinking. Finally, retheorizing and reformulating occurred when a teacher critically examines his or her own theories and practice in regard to academic theories (Zeichner & Liston, 1996).

A common issue with the success of reflective practice and thinking is the ability to remove personal bias in the process (Mezirow, 1990). Rodgers (2002) enters the literature addressing this common problem when she required reflection to be done in community of others and following scientific inquiry. With the addition of a community member in the process, it is easier to lessen the individual bias. Ultimately, a learning community and collaboration allowed others to help in the critical analysis of an individual's behavior (Osterman & Kottkamp, 1993; Van den Bossche & Beausaert, 2011).

Collier (1999) found in her study with student teachers, the importance of the individual in the process. The individual's constantly changing world view and beliefs on teaching and learning will directly effect the level at which the individual will be able to reflect. In addition, learners who view educators that place an emphasis on reflecting are more likely to begin attempting the reflective process themselves (Kaye, 2014). With a cooperating teacher attempting to model the best practices of the profession for the student teacher, it was interesting to evaluate if the student teacher had an impact on the reflective practices of the cooperating teacher.

METHODOLOGY
Theoretical Framework
In order to understand the effect a student teacher has on the reflective practices of a cooperating teacher and the number of reflective opportunities, a decision was made by the researcher to utilize Carol Rodgers' (2002) definition of reflection as a theoretical framework for the study. She delineated the criteria of reflection into four distinct areas:

1. Reflection is a meaning-making process that moves a learner from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas. It is the thread that makes continuity of learning possible, and ensures the progress of the individual and, ultimately, society. It is a means to essentially moral ends.
2. Reflection is a systematic, rigorous, disciplined way of thinking, with its roots in scientific inquiry.
3. Reflection needs to happen in community, in interaction with others.
4. Reflection requires attitudes that value the personal and intellectual growth of oneself and of others. (p. 845)

In addition, the above definition was not only the theoretical foundational for this article but also the framework from which the collected qualitative data was coded.

Research Question
The theoretical framework for reflection as explained by Rodgers above was the basis for analyzing the results. As a key aspect of the study was the reflective practices and changes by the cooperating teacher, the following question was developed:

1.   Does a student teacher cause a cooperating teacher to change his/her reflective practice?

Beyond the immediate answer to the question, the researcher attempted to ascertain how, if at all, the student teacher caused the cooperating teacher to be more reflective.

Research Design
The study was developed as a qualitative design to analyze the reflective practices of cooperating teachers and how the presence of a student teacher affects these reflective practices. Again, the theoretical foundation utilized is Rodgers' (2002) definition of reflection. Grounded Theory (Corbin & Strauss, 1990) was utilized to deduce meaning from the surveys and interviews.

Participants

Subjects had a student teacher in their classrooms from a small, private institution from Northwest Ohio for the spring 2015 semester. The subjects were part of a convenience sample as their proximity (a radius of 40 miles) allowed the researcher to interview them easily in a short time period of a couple weeks due to the student teacher leaving the placement and the end of school. Subjects were then further restricted based on teaching grades 6-12. Thirty teachers met the criteria for inclusion in the study. Of the thirty contacted teachers, five completed the survey and four cooperating teachers agreed to participate in the interview process after the surveys. It is important to note the four cooperating teachers who participated in the interview were part of the same group of individuals who completed both the pre and post surveys through Google Drive.

As the survey participants were not asked to complete or provide any identifiable information, the participants of the survey will be reported in one large group. Data were analyzed for tendencies over the large group. Within the group, one teacher has been teaching 1-5 years, one 6-10 years, two 11-15 years, and one 25 or more years. Four of the five teachers self-reported as working in rural school districts. The fifth teacher reported working in a suburban school district. Two of the cooperating teachers were employed in middle schools while the other three reported working in a high school setting. The teaching experience in terms of years of the five teachers involved in the survey varies as well.   Lastly, one teacher self-reported having earned an undergraduate degree, three teachers earned a master's degree, and one has earned a master's degree plus additional graduate credits.

As the interview of the participants allowed for a more detailed description of the participants, each participating teaching was assigned a letter and he/she will be referred to as Teacher A, Teacher B, Teacher C, or Teacher D. Teacher A was a male history teacher of 11 years employed at a rural high school. Teacher B was a male history teacher of 6 years in a rural middle school setting. Teacher C was a male history teacher of 16 years in a split middle school and high school rural setting. Lastly, Teacher D was a female science teacher of 4 years in a rural middle school setting.

Data Collection Procedures

Participants were emailed the survey through Google Survey to their professional email address. Google Survey compiled the responses in a spreadsheet based on each individual question and response as each participant completed the survey. The survey contained both multiple choice as well as extended responses. The final survey in May was completed in the same format as the initial December survey. In addition, the May survey was identical to the December survey.

The interview was arranged at the participant's school at a time convenient for the participant. The interview was conducted in a semi-structured interview process to allow for follow-up questions to be asked and ideas further explain by the participants (Drever, 1995; Fraenkel, Wallen, & Hyun, 2014).   The interview was taped and recorded. The interviews lasted approximately 20 minutes. Upon completion of the interview, the responses of the participants were transcribed by the researcher.

RESULTS
Interviews
Teacher A

To begin the examination of Teacher A, it was best to review Teacher A's personal reflection practices in order to establish a beginning point prior to the student teacher's arrival and then compare it to the self-explained practices when the student teacher was present. Teacher A, when asked about his personal reflection practices prior to the student teacher, focused on meaning making. For example Teacher A stated, "Mine is just looking at the overall understanding. Did the students get what we were trying to get across? What are the questions that [the students] asked? What are areas that they need help in? And basically, just what can you do better?" Here, he was making meaning of the feedback provided by the students and comparing it to his theory of education to create an understanding of what the students need as far as extra support. This connected to Rodgers' framework as Teacher A was making meaning of the feedback and connected it to his personal theory of education.

When Teacher A was asked to explain how his reflection opportunities changed as a result of the student teacher, he elicited a response signifying community. Teacher A stated, "…just to get an open conversation going." This shows an attempt to build a situation where a community can exist. Teacher A attempted to ask open ended questions in an effort to truly understand his student teacher's ideas.

Along with community, Teacher A indicated a response relating to scientific inquiry. He stated, "…just kind of thinking as I would have done this as a teacher. What would the results have been? Versus what he did. What were the results? Pros/ cons. Look at it both ways." Here Teacher A was interpreting his teaching experience against those of his student teacher, naming questions that arise, generating possible explanations, and trying to generate explanations. By conducting this analysis, he was using the scientific inquiry process:

spontaneous interpretation of the experience, naming the problems or questions from that experience, generating explanations, and developing a hypothesis.

Also, Teacher A indicated an increase in his desire for a growth of self and others with the student teacher present. Teacher A commented, "Yeah, you, if you're not growing professionally I think you are kind of missing out on the boat of the whole experience. This is the third [student teacher] I have had in my career and every one has brought just a little bit of different picture to the overall teaching." Again, Teacher A is indicating a willing and open approach to learning about his practice with his student teacher. He mentions how each student teacher brought a "different overall picture" to his teaching.

Lastly, Teacher A indicated he felt the student teacher makes him more reflective. To explain, Teacher A felt he was afforded more time when working with a student teacher. He stated, "...there is a little bit more time and you are always trying to think of what they can do better to try and help them." This indicated an improvement focus on the student teacher, but he continued by stating, "…this way it opens up your schedule a little more while you are in school you are able to think more on school related topics." Also, Teacher A concluded, "And just a normal teaching mode where you are by yourself and there is no student teacher, you are just going from class to class to class and at the end of the day you're not always thinking about what you did that day." Indeed, Teacher A strongly indicated how the additional time allowed him to believe he was more reflective when working with a student teacher.

Overall, Teacher A indicated a presence of meaning making in his pre student teacher reflection situations. Once the student teacher arrived, comments indicated a presence of scientific inquiry, community, and growth of self and others. In addition, Teacher A indicated that having a student teacher caused him to be more reflective.

Teacher B

As with Teacher A, an analysis of Teacher B's personal reflection practices was used to establish a beginning point prior to the student teacher's arrival and then compare it to the self-explained practices when the student teacher was present. Teacher B initially focused on scientific inquiry. Teacher B stated, "I like, I definitely reflect on, I think the, the lesson delivery to find out if it was successful. When I look at kids' results when I formative assess them, what did I do well and what can I improve. What holes are there in my, is in my delivery. And what holes is in their content knowledge. And how I can fix it for the following day." Clearly, this comment reaches three of the elements of scientific inquiry as Teacher B made a spontaneous interpretation of the results from a formative assessment: "…what did I do well and what can I improve." Based on these results, he analyzed any possible "holes" in his delivery and student content knowledge. He then finished with a search for possible explanations. All of these steps indicated scientific inquiry.

Teacher B with the student teacher indicated a response in the meaning making area. Teacher B stated, "I have had the luxury of having a student teacher to be able to really reflect on everything that I have been doing, and almost forcing them to try something new." By "reflecting on everything I have been doing," he was making meaning on his previous moments and evaluating these experiences against his operating theory of education.

Lastly, Teacher B was asked if he felt he was more reflective with the student teacher. Teacher B indicated he felt the student teacher makes him more reflective. In addition, Teacher B indicated a reason for his answer that focused on growth of self and others and meaning making. Teacher B stated, "…because I need to be able to practice what I preach. It is very easy to sit in this chair when someone else is in front for the class and be critical. ... If I am going to enforce a standard or preach some sort of educational philosophy, I better be practicing it when that student teacher leaves." Now, Teacher B indicated a growth of self and others as he has stated an awareness of understanding what needed to be changed and an effort to "practice what he preaches."

Overall, Teacher B indicated a presence of scientific inquiry in his pre student teacher reflection situations. Once the student teacher arrived, comments indicated a presence of meaning making and growth of self and others. In addition, Teacher B indicated that having a student teacher caused him to be more reflective.

Teacher C

As with the previous two teachers, Teacher C's personal reflection practices were used to establish a beginning point prior to the student teacher's arrival and then compare it to the self-explained practices when the student teacher was present. Teacher C focused on meaning making for his reflective practices prior to the student teacher. Teacher C stated, "One of the things that I do like to make sure that works is if I do something in class and it gives the kids too much free time and they are screwing around then I immediately, I don't reflect upon it necessarily, I immediately say on the fly once again, I immediately say, 'This isn't working I need to do something else.' Or I need to stretch it out." This demonstrated Teacher C's desire to make meaning of his experiences. Teacher C attempted to draw a connection between his experiences and use them to build his theory on educating students. His pedagogy was used in an "immediate" sense as he made decisions and adjustments within the class period.

Once the student teacher arrived, Teacher C's focus continued to be meaning making. Teacher C stated, "I was just saying, 'Here is what I do, and here is what you did. And here's why I do it my way. And

here's why doing it your way doesn't work because you saw the results.'" Again, Teacher C compared the student teacher's practices to his own for a meaning making purpose. Clearly, he used his observations to inform his practices and compared his practices to those of his student teacher.

In addition, Teacher C indicated a response relating to community. He stated, "So, I guess, discussion." Here, Teacher C indicated for the first time a collaborative effort between his student teacher and himself. As a discussion indicated a two person moment where both were contributing, it was established this comment fit into the community aspect of reflection.

When asked if the student teacher impacted his reflective practices, Teacher C indicated a strong "no" in regard to the initial question. He did not feel the presence of a student teacher led to a change in his practice. However, Teacher C continued his expressed comments on meaning making with the presence of a student teacher. Teacher C explained vaguely about how the presence of a student teacher allowed him to form meaning about his own teaching practices. Teacher C stated, "I guess I might have, you know, I sat and listened to him and been like, 'OK, maybe I have fallen into this trap a little bit.'" In addition, Teacher C commented, "But every once in a while something he would do would kind of get my attention and I would think, 'OK, well, you know, maybe I'm telling him not to do that but here maybe I'm doing it.' So maybe I could not do that anymore." Although not providing specific examples, Teacher C explained how the presence of the student teacher provided an opportunity for him to analyze the meaning making aspect.

Overall, Teacher C indicated a presence of meaning making in his pre student teacher reflection situations. Once the student teacher arrived, comments still indicated a presence of meaning making and one reference to community. In addition, Teacher C indicated that having a student teacher did not cause him to be more reflective although he was unable to provide a clear reason to support his belief.

Teacher D

An analysis of Teacher D's personal reflection practices was used to establish a beginning point prior to the student teacher's arrival and then compare it to the self-explained practices when the student teacher was present. Teacher D focused completely on scientific inquiry when asked about her reflective practices. Teacher D stated, "I'll look at the growth that I have seen from my kids from the beginning to the end with those formative assessments. How I thought the flow of the lesson went. If I needed to change up the order of anything or if I needed to add in any extra explanations." Here, Teacher D indicated an interpretation of formative data from assessments. She used this data to name any problems she observed and attempted to generate possible explanations.

With the inclusion of a student teacher, Teacher D focused on community and meaning making. To explain the community aspect Teacher D stated, "I am a super reflective person so I think if anything though it was just nice to have another person to bounce the reflections off. So, that was one nice thing. I am the only sixth grade science teacher so I talk with my other colleagues about you know how things are going in class. We meet every day in team but it was nice having somebody in my classroom that we could kind of talk together." Teacher D explained how the presence of a student teacher provided the in-class reflective piece she felt she does not have in her school as the only science teacher in her grade. Her explanations displayed the personal benefit she experienced from an additional person in the classroom upon her reflective practice.

Along with comments on meaning making and community, Teacher D commented in regard to growth of self, "…having someone come into your classroom makes you more aware of what you are doing and so it makes you strive to make sure that everything is even more perfect than before." Her desire to do activities and her practices more shows her concern for her own teaching pedagogy as well as that of her student teacher.

In addition, Teacher D indicated she felt the student teacher made her more reflective. However, she did not provide a clear response for why she felt this way in regard to being more reflective. In addition, none of her comments fit within any of the reflective areas for the codes used in this study.

Overall, Teacher D indicated a presence scientific inquiry in her pre student teacher reflection situations. Once the student teacher arrived, comments did not indicate anymore areas of scientific inquiry but rather moved toward meaning making, community, and growth of self and others. Teacher D indicated that having a student teacher caused her to be more reflective although she was unable to provide a clear reason to support her belief.

SURVEYS

As there were two surveys administered to the participating cooperating teachers, it is important to begin with an examination of the survey prior to the presence of the student teacher and compare its comments to those of the survey after the student teacher was finished in the placement. The initial survey had five respondents. When asked the question, *What is the content of a typical reflective period you have on a typical school day?*, the only area related to reflection was meaning making.

As the respondents were not identifiable, all comments will be talked of in general. Of the five respondents, only four made comments in the meaning making area. Typical comments included, "Teaching strategies, questioning, assessment, homework assigned, how did students respond to lesson, what questions did they have

following lesson." Here, the teacher was examining specific moments in the day and comparing them to his/her theory. Looking at student responses that fit and those that did not fit in to the working theory were reflected upon by the teacher. Another teacher stated, "Student responses, flow of lessons, availability & ease of use with technology, student HW, testing results." This depicted a teacher examining a multiple of items from the classroom: responses, lessons, technology, homework, and testing results. The teacher is making meaning of these experiences as they either fit or do not fit into his/her working theory.

After the presence of a student teacher, the four of the five cooperating teachers' comments were focused on meaning making. The cooperating teachers commented, "I think about what went well, what can I do better, & what questions were asked that I need to address in the future." Here, this teacher was reviewing his/her success or failure within the classroom and comparing it to his/her operational theory for education. In addition a teacher stated, "What went well an[d] what totally bombed. How does this relate to decisions I've made in the past? What is this connected to that I can use in the future?" Again as with the previous teacher, this educator was comparing what happened to his/her working theory. The statement concerning an effort to make connections and an evaluation on how to use the understanding in the future directly relates to meaning making.

All of the comments depict examples of cooperating teachers who had an experience and are attempting to make meaning of the situation that occurred in order to connect to their operating theory of education or to challenge it for further consideration. Each one was looking to improve his/her practice by examining a practice and evaluate its usefulness.

DISCUSSION
Does a student teacher cause a cooperating teacher to change his/her reflective practice?

In reviewing of the data, it was clear the teachers indicated more of the elements of reflection. However, no single teacher displayed all four elements of reflection through their responses at any point in the interview when analyzed as before and after the presence of the student teacher. This finding was unanticipated as the researcher felt the only missing link for the four pillars of reflection to occur was community. It was assumed the teachers were meaning making, conducting scientific inquiry, and had a desire for a growth of self and others as these are the required elements of reflection. Interestingly, each teacher indicated more of the pillars of reflection but none achieved all four in the presence of the student teacher. This indicated to the researcher the cooperating teachers were not familiar with the full reflective process.

By an addition of the survey information, the data did not indicate any change in reflection prior to the student teacher when compared with afterward. All the teachers commented on meaning making both before and after the presence of the student teacher. This was not surprising as teachers constantly have to make decisions and make meaning from their experiences. The meaning making element seemed to be the most basic element of teaching- solving problems as they happen.

After review of both the interviews and surveys, the result was inconclusive. The teachers all believed they were more reflective as indicated in their responses. However, the data did not support their claims. The surveys showed only meaning making with no reference of the other three elements of reflection. The interviews showed an increase of the reflective elements in the teachers when a student teacher was present. However, no teacher indicated a use of all four categories of reflection in their responses.

Upon reviewing the results, it is clear there are some direct connections to the established research on reflection. Dewey's (1910) assertion required two items for reflection to occur: a problem or issue and an investigation/evaluation to support or nullify the belief held. An unmentioned element is required when reflection is taking place: time. An individual is required to have time in order to properly investigate and evaluate a problem. Interestingly, Teacher A indicated the increase in time as a factor for the increase of reflection. Although not referenced by the other teachers in their responses to the survey and interview questions, it stood as an important reminder of the time element required to fully participate in the reflective process.

A continued reference to the time element occurred when a connection was attempted to be made with Zeichner and Liston's (1996) five steps for reflection when teaching. It was apparent many of the teachers were able to navigate through the first two levels: rapid reflection and making adjustments based on cues. Teacher C was the most eloquent teacher whom depicted these first two steps. He even commented, "It is something I do right on the fly." Here he depicted how he rapidly reflected and the adjustments based on his perceptions from the students and the environment. These "on the fly" adjustments indicated Teacher C had to make rapid reflection as he did not have much time to analyze the situation and consider all elements. In addition, Teacher C made adjustments based on the cues he gained from the students as he explained how he made choices within the flow of the typical classroom session.

The third element as explained by Zeichner and Liston (1996) is review where a teacher thinks about, discusses, or writes about some aspect of his/her teaching. The teacher is putting thoughts to the written word to examine the fairness of what he/she is producing, exhibiting, teaching, and demonstrating (Adler, 1990). Teacher D demonstrated review in her responses. She stated, "…I paid more closer [sic] attention to the details that I was

[writing] in my reflection." Teacher D repeatedly discussed how she would write on note cards or plans her reflections of the class period. This connects to Zeichner and Liston's (1996) final element as Teacher D actually wrote her thoughts down based on her experiences within the classroom.

The fourth and fifth items discussed by Zeichner and Liston (1996) were when a teacher engages in a systematic and sustained thinking over time typically by collecting data or analyzing research and finally when a teacher critically examines his or her own theories and practice in regard to academic theories. Neither was described in the surveys nor interviews. All the teachers in the interview indicated the increase of reflection. However, none described the systematic and sustained thinking or critical analysis of their own theories and practice. A possible reason for this lack of reaching the final two items could easily be the lack of time a teacher has in his/her day to effectively reflect without interruptions from students, teachers, parents, and administrators. In addition, there are the required elements of lesson planning and assigned duties such as lunch room, study hall, and hall duty. All of these elements require time that can be used for the purpose of reflection.

Another element connected between the existing literature and the results of this research question was the aspect of community. Community was shown to reduce personal bias (Mezirow, 1990) and to allow others to help the individual critically analyze his/her own behavior (Osterman & Kottkamp, 1993; Van den Bossche & Beausaert, 2011). Also, Rodgers (2002) included community as one of her four pillars of reflection. The presence of the student teacher in the classroom provided a perfect community aspect to appear. Teacher C actively described,

> I am a super reflective person so I think if anything though it was just nice to have another person to bounce the reflections off. So, that was one nice thing. I am the only sixth grade science teacher so I talk with my other colleagues about you know how things are going in class. We meet every day in team but it was nice having somebody in my classroom that we could kind of talk together.

In addition, Teacher D commented, "And so it was nice to have somebody to bounce ideas off of to see OK if we were going to change something, how would we change it?" Finally, Teacher D explained, "…I have a lot of questions that I feel like I have to answer myself that I don't get a lot of you know. So it is nice when you can go back and forth with somebody else."   Teacher D explained how the presence of a student teacher provided the in-class reflective piece she felt she does not have in her school as the only science teacher in her grade. Clearly, the community aspect of another person to communicate with in order to help her teaching practices was a benefit for Teacher D.

The positive element for Teacher D based on the community aspect provided by the student teacher and the impact on her reflective practices seemed to be more beneficial based on the school situation. As Teacher D is the only science content area teacher for her grade level in her building, there seemed to be the added benefit for the presence of the student teacher as the individual provided a community possibility right within her classroom. This benefit should be seen in most classrooms with student teachers but seems to be more pronounced in this situation due to the limited community options Teacher D has in her school in her content area.

Although not mentioned by the other individuals specifically in the data collection, community is an area of interest for future exploration to see if this is a common phenomenon. Teachers are by nature exclusionary in their classrooms from their peers due to the significant amount of time needed to collaborate (Sanholtz & Merseth, 1992) unless they are in a team or co-teaching environment. The response indicated by Teacher D shows the reality for a teacher. The benefits seem to be obvious and it is curious whether a larger sample would have produced similar results.

The final aspect of reflection mention in regard to a student teacher and his/her impact of reflection was Johns' (2009) that just because an individual is able to understand the meaning of data does not mean he or she can easily change his/her practices. From the lack of ease in ability to change practices, Johns (2009) described three basic inhibitors to use of the reflective practice due to culture: tradition, force, and embodiment. Tradition is adhering on to predetermined customs, norms, and prejudices that existed prior to the reflection process. Force is the way normal relationships are maintained and created through force or power. Embodiment is the way people normally think about the world prior to the reflective process (Fay, 1987). Although not a clear and perfect connection, all four teachers in the interview indicated the student teacher did not cause them to try a new or untried method in their classroom. Many of the teachers said no but then further explained how they were going to borrow an idea the student teacher proposed in the classroom. For example, Teacher A indicated a Pythagorean's Theorem idea he would be using for future lessons.

Overall, it was curious how the teachers all felt they were more reflective when working with a student teacher in their presence. However, the data from the surveys and interviews show this was not demonstrated. This lack of an increase of reflection may be due to several factors. The teachers were not provided a clear working definition of Rodgers' (2002) theory being used as the foundation of the study. Also, the teachers demonstrated a lack of knowing the definition of reflection in both the survey and interview. However, this created a bit of a paradox. If the working theory was provided, would the teachers have responded differently and provided the researcher with what he wanted to hear rather than what was actually happening in the school?

Also, it is plausible the addition of the student teacher created a situation where the cooperating teacher was even busier with increased demands. This increase in the demand on time could easily impact the amount of time available for reflection causing the adverse effect- less reflection.

LIMITATIONS

There were two major limitations present in this study. First, the cooperating teacher participated with full knowledge of the focus of the study. With the focus in mind, each participant completed two surveys and participated in an interview. This may have led to the halo effect as participants possibly provided information that made them look more reflective or provided information that the researcher would want to hear. An effort was be made by the researcher to eliminate the halo effect by using a scripted survey and interview.

Along with the participant limitation, the study was limited on time. As student teachers only work with a cooperating teacher for the duration of their school semester, the influence of the student teacher on the reflective practices of the cooperating teachers is limited to around five months in duration. This study did not take into account the maturation threat (Fraenkel, Wallen, & Hyun, 1993). The reflective practices may still be developing and on-going after the student teacher leaves the placement. This study accessed the time immediately prior to the student teacher's arrival and immediately after the student teacher completed his/her placement.

Future Research Opportunities

After an examination of this research project, it was decided by the researcher there are several aspects of the study that could lead to future research opportunities. The most interesting one to the researcher was the idea of applying the same principle of the current study to a true co-teaching environment. Bacharach, Washut Heck, and Dahlberg (2010) described five differing methods to co-teach: one teach, one observe; one teach, one assist; station teaching; parallel teaching; supplemental teaching; alternative teaching; and team teaching. It would be interesting to evaluate if the co-teaching environment where both instructors, the student teacher and cooperating teacher, were actively involved in the educational process. It would be interesting to see if the differing dynamic of both teachers active in the classroom yields differing results in regard to the reflection occurring between the educators.

In addition to the co-teaching model, an analysis on the changing, or lack thereof, in practice of cooperating teachers due to the presence of a student teacher could be analyzed. Some of the teachers in this study indicated they changed or adapted their practices due to the student teacher's impact in the classroom while others indicated no change. It would be intriguing to evaluate the lack of change in regard to Johns' (2009) study that indicated a lack of reflection on practices due to tradition, force, or embodiment. A study analyzing which factor was most prevalent in the reluctance to reflect could prove valuable to the field of education.

Another area for further research would be a byproduct of the unintended consequence in regard to the participants not being able to define reflection and thus missing out on many of the benefits it provides. A study can be conducted where teachers are educated on the four elements of reflection and how to properly use each pillar. Upon the education of the teacher, an analysis can be conducted if there is an improvement in teaching practices. In addition, the same idea may be applied to a follow-up on this study. Education of both the student teacher and cooperating teacher on reflection and how to properly use it may very well provide interesting results and impact how we educate our preservice teachers and their cooperating teachers.

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