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Pre-service teachers' blog reflections: Illuminating their growth and development

Rubén Garza^{1*} and Shaunna F. Smith¹

Abstract: Blogging, a mode of electronic journaling, has been identified as an effective means to help pre-service teachers to construct meaning about their experiences. The purpose of this study was to examine pre-service teachers' reflections about their praxis through blogging and to describe the nature of their growth and development. The use of reflective writing through blogging helped to identify three themes that emerged from the data: (1) validation, (2) prescriptive, and (3) self-assessment. Our findings suggest that blogging facilitated a community of learners that provided support and encouragement. Pre-service teachers' reflections revealed a focus on the mechanistic aspects of teaching without critically examining the nature of what was observed. However, our findings also suggest that structuring reflective thinking through blogging has the potential to foster a nascent understanding about teaching and learning.

Subjects: Secondary Education; Teacher Training; Teaching & Learning

Keywords: teacher reflection; blogging; pre-service teacher education; secondary education



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PUBLIC INTEREST STATEMENT

Pre-service teachers' reflective practice can serve to challenge and to reinforce prior knowledge about the cognitive, social, emotional, and political aspects related to teaching. This type of practice can be facilitated through the use of blogs. Blogging can provide a space for pre-service teachers to realize that other cohort members, wrestling with the same emotional experiences throughout the semester, are able to connect with one another without feeling isolated on an emotional level. This may serve as a form of validation. Deliberate reflection about teaching and learning can be viewed as a precursor to pre-service teachers' growth and professional development, before the student teaching phase of their preparation. As aspiring teachers continue to evolve in their practice, their nascent understanding of teaching and learning will continue to be enhanced through their varied experiences and interaction with students, peers, and members of the community where they teach.

1. Introduction

Darling-Hammond (2006) contends that aspiring teachers need a depth of knowledge regarding the complex dynamics of teaching and the factors that influence the context of the classroom to effectively address a diverse learning environment. This means that teachers must examine the personal lens that informs their notions about teaching and learning (Kaldi & Pyrgiotakis, 2009). Although, pre-service teachers' field experiences can provide them with learning opportunities to extend their pedagogical knowledge, skills, and dispositions (Garza & Ovando, 2012), they also need to learn how to learn about those experiences. As (Farrell, 2004) explains: "we learn from reflecting on that experience" (p. 7), and helping teachers to develop an understanding of their moral and ethical practice. "This knowledge is acquired through experience and through considered and deliberative reflection about or inquiry into experience" (Cochran-Smith & Lytle, 1999, p. 262).

Examining teacher practice can foster critical inquiry about the educational experiences and challenge the lens through which they interact in authentic teaching contexts. Reflection is a necessary process to acquire knowledge that can validate teachers' classroom decisions and actions (Brubacher, Case, & Reagan, 1994). Although reflective practice may involve questioning to attain a solution to a problem (Zeichner & Liston, 1996), or simply to improve one's teaching proficiency (Brubacher et al. (1994), this process is also essential to pre-service teachers' development of teacher identity and self-efficacy (Farrell, 2004).

While teacher practice has been studied through varied approaches for different reasons, "reflective practice is one area currently drawing on different technologies, as teacher educators incorporate a range of technology into preservice teacher reflection" (Shoffner, 2009, p. 144). For example, blogging can provide a writer with a space to share personal classroom experiences and construct meaning about those experiences, use the platform to inquire further about those experiences or receive functional feedback from peers, and to foster a community of learners (Miller & Williams, 2013). As a result, bloggers can be viewed through a self-cultivated online community of learners that can reinforce mutual learning, educational experiences, and dispositions (Rodgers, 2002). However, as Hammerness et al. (2005) indicate, more research is needed to describe the characteristics of learning experiences that may foster teacher development. Therefore, the purpose of this study was to examine pre-service teachers' reflections about their praxis through blogging and to describe the nature of their thinking about their growth and development.

1.1. Defining reflective thinking

This study is guided by a framework on teacher reflection, a common topic in the education field. Developing reflective practice, reflective thinking, or reflective teaching is an aspect of lifelong learning and a critical process for professional growth and development (Larrivee, 2005; Zeichner & Liston, 1996). This process can be traced back to Dewey (1933), often cited as the precursor of defining reflective thinking. "It involves (1) a state of doubt, hesitation, perplexity, mental difficulty, in which thinking originates, and (2) an act of searching, hunting, inquiring, to find material that will resolve the doubt, settle and dispose of the perplexity" (p. 12). Reflective practice can be instrumental when assessing a situation to understand better particular aspects of an unexpected experience (Schon, 1983). Furthermore, teacher reflective practice is also described as "(a) retrospection, (b) problem solving, (c) critical reflection, or (d) reflection in action" (Boody, 2008, p. 298).

Building on van Manen's (1977) description of reflective thinking, Taggart and Wilson (1998) have explained further that when novice teachers reflect at the technical level, they focus predominantly on aspects of their teaching performance due to inexperience with the dynamics of teaching. At the contextual level of reflection, they link practice to theory by examining their own beliefs about the teaching context and the outcomes of their decisions. Critical consciousness involves questioning of moral and ethical issues while being a critical consumer of knowledge. Similarly, Surbeck, Han, and Moyer (1991) described the nature of reflection as levels of thinking:

Reaction—The reaction category contained students' initial responses to class content including peer teaching, discussions, activities, lectures, environments, instructors, peers, and article they had read.

Elaboration—Students expanded their first reactions by explaining their feelings, verifying their thinking, giving an example, or referring to other situations.

Contemplation—Entries showing the initial reaction combined further elaboration as well as thinking about personal, professional, or social/ethical problems (pp. 25–27).

Furthermore, Nelson and Sadler (2013) have expanded on the notion of teacher reflection by proposing a model to guide the development of pre-service teachers' reflection:

- Technical reflection: efficient techniques derived from research;
- Reflection-in and on-action: practical knowledge from one's own unique experience;
- Deliberative reflection: effective decision-making by considering a variety of sources;
- Personalistic reflection: personal growth and relational issues; and
- Critical reflection: improving the quality of life of the disadvantaged, commitment to inquiry, self-criticism, and social action (p. 49).

Although the definitions of reflection may vary, the ultimate goal of the process involves the self as an active participant to examine dilemmas that emerge, and coupled with personal values and beliefs, to make a judgment that requires an alternative solution (Larrivee, 2005). Similarly, Taggart and Wilson (1998) stated that “reflective thinking is the process of making informed and logical decisions on the educational matters, then assessing the consequences of those decisions” (p. 2).

1.2. Nature of pre-service teacher reflection

Darling-Hammond (2006) reported that teachers need to be equipped with the knowledge and skills to respond effectively to dilemmas that may emerge in the classroom, but also to be proactive in fostering their own learning to enhance their professional growth. While reflective practice has emerged as a way to foster teachers' problem-solving skills and professional capacity, research has revealed the need for teacher preparation programs to develop the skill of reflective thinking in pre-service (Hrevnack, 2011). For example, Cohen-Sayag and Fischl (2012) explored the use of reflective writing with 24 pre-service teachers to identify levels of reflection and the link to their teaching. Results indicated that pre-service teachers' reflections were primarily descriptive in nature and some participants' writing reflected a comparative or critical level. While some pre-service teachers improved levels of reflection, their teaching behavior was not similarly affected. In a similar study, Liakopoulou (2012) examined the influence of the field experience on the development of 68 secondary pre-service teachers' reflective practice. Findings indicated that their reflections focused on prescribed aspects of teaching, commenting at a superficial level, and few analyzed their learning through critical reflection.

Researchers have also explored pre-service teachers' reflective practice through other means. For example, Hrevnack (2011) developed a “Guided Reflective Observation and Analysis Model” to help pre-service teachers develop their reflective thinking by linking theory to their practice (p. 90). This includes pre-service teachers conducting classroom observations and then reflecting on the application of theory in class through instructor-guided questions. Furthermore, Odhiambo (2010) used action research as an approach to foster 27 pre-service teachers' reflective thinking and found that the majority of the participants favorably perceived the process as a useful way to improve their reflection.

Pre-service teachers' reflective practice must be facilitated, given the complex nature of teaching in diverse classroom settings, as a springboard for ongoing professional reflection (Lupinski, Jenkins, Beard, & Jones, 2012). This practice has the potential to enhance personal and professional capacity, to improve the ability to control and to respond appropriately to the teaching context, to self-assess

and make the necessary adjustments, and to learn from unexpected events (as cited in Rogers, 2001). Reflection is critical for “promoting growth in critical analysis of teaching, systematically reflecting on self-development and on actions within classroom and work contexts, and linking understanding with classroom practice,” (Taggart & Wilson, 1998, p. 98). In view of the current research on reflective practice, the purpose of this study was to examine pre-service teachers’ reflections about their praxis through blogging as a way to capture their thinking about their growth and development. There is limited research that describes the use of blogging as a tool to examine pre-service teachers’ pedagogical development and the nature of their reflective practice about teaching and learning.

1.3. A framework for blogging

This study is also guided by a framework for educational blogging established by Deng and Yuen (2011). The framework highlights the educational affordances of blogging within pre-service teacher experiences/courses to facilitate both cognitive and social/psychosocial development. Through empirical research of multiple groups, Deng and Yuen updated their framework to emphasize that there is an additional blogging behavior in which the act of *reading* posts and comments generates a social connection that creates individual reflection (see Figure 1).

Based upon this framework, pre-service teachers can engage in three blogging behaviors, (1) write, (2) read, and/or (3) comment that result in a reflective experience that resides along a continuum that ranges from an individual level to a community level.

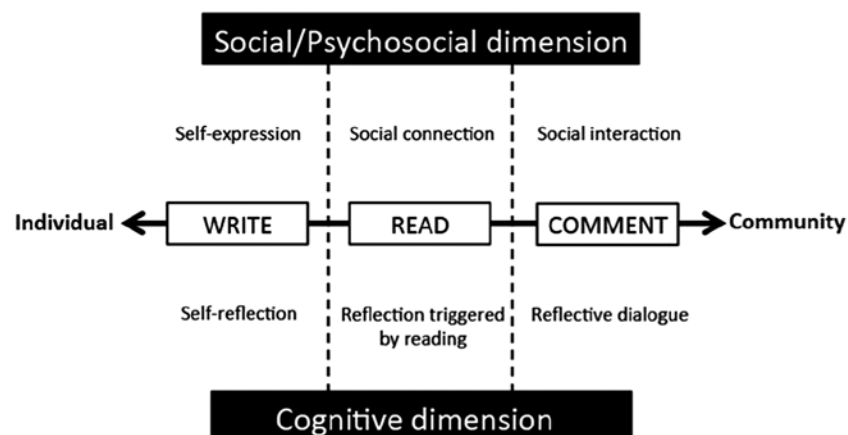
1.4. Blogging for enhanced learning

Blogs are web-based, socially reflective, and multimodal texts that have the potential to enhance course participation and conversation. As indicated by empirical research, blogs can promote the co-construction of knowledge (Du & Wagner, 2007; Oravec, 2003), create opportunity for peers to provide emotional and informational support to one another through the networked commenting feature across time and space; (Deng & Yuen, 2011; Hall & Davison, 2007), and promote an environment for reflection (Hourigan & Murray, 2010; Yang, 2009). Despite the aforementioned benefits, some empirical evidence highlight the pedagogical difficulties with blog integration, suggesting that blogging cannot consistently promote individual reflective thinking (Xie, Ke, & Sharma, 2008), and the ability to use blogs to generate authentic reflective conversation through peer comments and feedback is difficult without proper facilitation from the teacher (Hall & Davison, 2007; Kerawalla, Minocha, Kirkup, & Conole, 2009).

1.5. Co-constructing knowledge through peer support

The simplicity of the technology allows for ease of individual expression as well as opportunity to easily share feedback, which ultimately allows knowledge to develop socially among the participants. Du and

Figure 1. Deng and Yuen’s “new framework for the educational affordances of blogs” (2011, p. 450).



Wagner (2007) studied the use of blogs with 31 undergraduate students in which they found that weekly use of blogs to share information and knowledge allowed students the opportunity to cognitively developmental models and socially co-construct richer understanding of course materials. Similarly, emphasizing the importance of reflection and social interaction, Oravec (2003) used blogs to provide a bridge between traditional face-to-face class meetings and online class meetings within a blended learning environment. Findings suggested that utilizing a blogging environment to supplement face-to-face discussion can allow seemingly shy students to confidently “speak out” and gain peer support within a secure environment. Similarly, Miller and Williams (2013) used blogs to supplement traditional face-to-face instruction with two groups of pre-service teachers and discovered that weekly entries in their personal blogs created “a non-threatening arena where discussions with peers, prior to the in-class discuss, helped students to develop and cement their understanding” (p. 48).

As Deng and Yuen (2011) pointed out, blogs allow learners to develop cognitively and psychosocially through the act of (a) writing, (b) reading, and/or (c) commenting. These actions present varying levels of collaborative learning because “[blogs] transform the personal narrative of traditional journaling into a social process of strengthening connections and fostering mutual support” (p. 450). Encouraging interaction through peer learning and peer support, Hall and Davison (2007) explored learning outcomes from weekly blog posts with 79 undergraduate students and found that the use of blogs was superior to other projects that were designed to encourage reflection. Yang (2009) explored the use of blogs to support reflective learning with 43 pre-service teachers, specifically inquiring into the role of critical reflection in the development of a community of practice. By evaluating participants’ perspectives of the experience, data consisted of posts and comments, fact-to-face in-class dialog, and an end of semester questionnaire. Over the course of the semester, Yang found that blogs were a useful platform for transforming classroom discussions into a flexible environment to actively discuss relevant topics, including: (1) theories of teaching, (2) instructional approaches and methods used, (3) teaching evaluation methods, (4) self-awareness, and (5) questions about teaching and requests for advice. Findings further indicated that deep critical reflection on these topics increased from 19% to 40% when the instructors intervened to post comments that included open-ended questions to purposefully challenge the participants’ thinking. This deliberate instructor intervention was highlighted as one of the key contributing factors of the use of blogs to support reflective learning within a community of practice.

Similarly, Miller and Williams (2013) found that pre-service teachers, who reflected about assigned readings and field experiences through the use of reflective blogs, built community, developed a professional online identity, took ownership of their learning, and promoted reciprocity of responses.

Despite the aforementioned benefits, some empirical evidence highlight the pedagogical concerns with blog integration, suggesting that blogging cannot consistently promote individual reflective thinking (Xie et al., 2008). However, many researchers agree that the ability to use blogs to generate authentic reflective conversation through peer comments and feedback is directly related to the level of facilitation from the teacher (Hall & Davison, 2007; Kerawalla et al., 2009; Miller & Williams, 2013). While the extant literature supports the need to develop pre-service teachers’ reflective thinking and Hrevnack (2011) calls for studying blogging further as a way to promote teachers’ critical thinking about their own practice, our study examined pre-service teachers’ reflections about their growth and development through blogging.

2. Methodological considerations

In this qualitative study, we used constant comparative analysis (Strauss & Corbin, 1998) to examine pre-service teachers’ weekly reflections to open-ended questions about their learning and the application of their learning while enrolled in a structured field experience class. This interpretive study was framed within the theoretical underpinnings of the nature of reflective thinking (Surbeck et al., 1991; Taggart & Wilson, 1998) and a framework for educational blogging (Deng & Yuen, 2011). The following questions guided this study:

- (1) In what ways does the use of blogs contribute to a community of learners?
- (2) What do pre-service teachers' blog reflections reveal about the nature of their reflective thinking?
- (3) What do pre-service teachers' blog reflections reveal about their growth and development?

2.1. Participants

Participants included 23 undergraduate high school pre-service teachers, 18 females (1 African-American, 1 Latina, and 15 White) and 5 males (3 Latinos and 2 White) from different content areas enrolled in a field-based course at a large southwestern university. Candidates seeking secondary certification generally enroll the semester before their student teaching practicum in the field-based internship. The participants attended class at the high school site on Tuesdays and Thursdays, 8 AM–3:30 PM, and received instruction half the time and collaborated with a cooperating teacher the other half. In addition, they participated in a mentoring initiative facilitated by the university instructor that paired each pre-service teacher with one or two English language learners. The participants met with the adolescents for one hour each on Tuesdays and Thursdays. Purposeful and convenience samplings (Creswell, 2003, 2007) were used to identify the participants. This means that the inquirer “purposefully selects individual participants that will best help the researcher understand the problem and research question” (Creswell, 2003, p. 185).

2.2. Data collection and procedures

Data for this study, approved by the university's IRB, were gathered for approximately 12 weeks. The participants created their blog during the first week of school with guided practice and received instructions for posting their weekly reflections during the semester. They were required to respond to the following questions: What learning did you take away from the C&I class? How did you apply this learning in your CT's class or with your mentee? **OR** what evidence can you provide to support your learning? What did you do to facilitate learning for the self while collaborating with your CT or working with your mentee? What did you learn about yourself this week? and Which of the eight lenses spoke to you this week? They ended their weekly reflections by selecting from a menu of prompts such as *I am frustrated by*, *I need to*, *I am excited*, and *I am confused*, and explaining their comments. In addition, the participants had to select weekly at least one different classmate to comment on their blog. They had to constructively acknowledge one specific item written in the blog and share a personal reflection about a notion reflected in the blog.

We chose blogging to provide a space for students to reflect and to document their experiences that could be shared with their classmates and the professor. Pre-service teachers would be able to stay connected with each other socially and would have the opportunity to learn about each other's varied experiences at the same school with different cooperating teachers. Ultimately, we wanted pre-service teachers' reflective thinking to serve as a medium to enhance their pedagogical knowledge and skills and dispositions about teaching and learning (Miller & Williams, 2013).

2.3. Data analysis

Qualitative data reduction strategies were used in order to identify themes through individual categorization and interpretation of the data (Creswell, 2003). Independently, we completed the first phase of the data analysis which involved the use of open codes to inductively develop categorical themes that organized participants' frequently used words and responses (Strauss & Corbin, 1998). The second phase of the data analysis involved a joint analysis and comparison of the initial codes that resulted in the collaborative development of specific themes related to participants' reports of reflective practice. Categories were sorted and placed into subcategories using constant comparative analysis (Strauss & Corbin, 1998) and axial coding (Charmaz, 2003), resulting in three themes. The third phase of the analysis consisted of independent review of the subcategories followed by a comparison of the previous codes in relationship to the research questions to determine theoretical development. To establish trustworthiness, two colleagues were asked to serve as external auditors to review the themes that emerged from the data analysis. Their feedback helped to deepen our final examination of the data and refinement of the final themes. As a pre-service teacher educator, bias

may have occurred in the gathering and interpretation of the data. However, requiring pre-service teachers to respond to the same questions at different times throughout the semester helped us to identify patterns in the meaning of their responses to enhance the trustworthiness of the findings.

3. Findings and discussion

Hall and Davison (2007) acknowledged that blogs are most effective for reflection when proper communication guidelines are provided to stimulate and to challenge pre-service teachers' thinking. Assessing the levels of objective, personal, and analytical responses is important to determine the nature of blogging as a reflective mode of learning. Promoting reflective writing through blogging in our study helped to identify the extent of pre-service teachers' growth and development and nature of their reflective thinking. Their professional capacity and level of thinking are discussed through the following themes that emerged from the data: (1) validation, (2) prescriptive, and (3) self-assessment.

3.1. Significant themes

3.1.1. Validation

Validation refers to the role that individuals fulfill when commenting to peers. Reflection in a collaborative setting promotes professional growth and helps teachers to dialog about their successes and challenges (Zeichner & Liston, 1996). Pre-service teachers in our study actively engaged in reflecting on their course work and clinical experiences while interacting with peers through blogging (Rodgers, 2002); however, most of the blog comments to peers could be categorized as social interaction as defined by Deng and Yuen (2011). "Social interaction refers to the socio-emotional interaction for the purpose of enhancing social presence" (p. 443). For example, a pre-service teacher commented on her classmate's blog entry:

I think you will do great as long as you keep planning and practicing. I think it doesn't hurt to write a short script or outline to keep you on point and on task. I believe that sometimes focusing on doing a good job can actually make you forget things ... become nervous ... so try to be comfortable. I was nervous but I think I did a good job for my first time teaching a lesson to high school students. You can do it!

This comment is an example of support provided for a peer through encouragement within a community of learners, but lacks the cognitive engagement as defined by Deng and Yuen (2011). The behavior is acknowledged and communicates the need to develop confidence to make the appropriate decisions reflecting a reaction to the event. While the majority of the comments provided positive reinforcement for actions or behavior in the classroom, elaboration in some cases was limited to one or two sentences. Overall, the nature of pre-service teachers' comments to peers reflected a reaction level of reflective thinking as described by Surbeck et al. (1991). This might be explained by the pre-service teachers' need to fulfill the weekly blogging requirement instead of committing to a learning opportunity by thoughtfully reflecting on the experiences. Another pre-service teacher expressed:

I definitely agree with you about stressing out over projects and homework! I now know I need to better prepare for the following semester. But we are almost done and everything we have learned over the course of the semester is going to make us better special education teachers. We just need to push through and then before you know it these two weeks will be over!

On the one hand, this comment reflects empathy and peer encouragement, but more importantly, the experience helped the pre-service teacher to recognize the need for better preparation for the student teaching phase of teacher preparation. This self-awareness of dispositions is a critical aspect of this comment because it demonstrates a self-expression of personal growth while at the same time providing self-reflection (Deng & Yuen, 2011). Although pre-service teachers received and provided weekly emotional support for each other through an online community that emerged through blogging, the nature of the comments were also a reaction to their feelings (Hall & Davison, 2007; Surbeck et al.,

1991). As a result, the online community developed into a safe environment where participants were able to relate to each other's experiences and emotional dissonance without fear of criticism.

Pre-service teachers also fostered a sense of community that validated the individual, actions, and ideas in an educational context while interacting weekly with others. For example,

Also - I just want to tell you that I always enjoy sitting next to you in class. You are really a caring person. Thank you for reminding me to breathe and having a great sense of humor. I appreciate you Thanks :)

Another pre-service teacher acknowledged her peer's personal qualities:

You are going to be a great Special Ed. teacher Mary-pseudonym! You are so much fun and so sweet. It is so great that you love what you are doing to. It's important! I'm thinking there is not a ton of money in teaching so it's a good thing we like what we are doing. And I'm sure your mentees love you ! Who wouldn't !!!

Whereas these comments highlight important qualities of a teacher, the message fails to convey the importance of these qualities or the need to develop personal qualities as they relate to the influence on students and teacher identity. In concert with research (Kottler & Zehm, 2000), the humanistic dimension, coupled with content and pedagogical knowledge and skills, are critical aspects of teacher identity. Nevertheless, pre-service teachers' reflective comments convey a reaction level of thinking (Surbeck et al., 1991) and the cognitive presence (Deng & Yuen, 2011) of the observations is missing, further supporting the need to help pre-service teachers develop an understanding of the importance of reflective practice (Bell & Mladenovic, 2013). Our findings suggest that blogging helped to cultivate a community of collective reflection that also informed their own learning about their diverse experiences while collaborating with a high school teacher and their peers, a process supported by previous research (Kaasila & Lauriala, 2012).

Some pre-service teachers linked the instructional approaches and methods they observed in their collaborating teacher's classroom to their course work learning and offered a brief explanation. For example, a pre-service teacher expressed:

I think your insight about classroom management is very useful. I am very sensitive to this lens because it is one of my weak areas! I totally agree that it really has an effect on student achievement. If a class has little to no classroom management, then students think they can get away with whatever, or don't take your class seriously. (I have witnessed this in my CT's class) If students know there are consequences, or at least an expectation from them on how things should and should go inside your classroom, you will definitely see a difference in their participation and achievement level (or at least I would hope so!)

This contextual level of reflection (Taggart & Wilson, 1998), although briefly elaborated, demonstrates how classroom episodes can help the individual to see theory in action and recognize the effectiveness of its application. The actual classroom experience enhanced understanding of the theory and connected it to the practice observed during instruction (Yang, 2009). Another pre-service teacher valued actions reported by a peer:

I think it's great that you were able to be flexible and change up your lesson, after seeing that what you did first might not have worked. Different things work for different classes and I'm sure that when you have your own classroom one day, you will be able to plan accordingly for each class. I also think that you really saw this as a learning opportunity from yourself and that is awesome! :)

The action taken by the peer is valued and seen as critical to effective teaching, but more importantly, the comment reflects a link to understanding classroom practice. The comment also conveys an evaluation of the experience, an aspect of reflective writing (Hourani, 2013). Additionally, the

importance of self-regulation, an aspect of being a reflective practitioner (Middleton, Abrams, & Seaman, 2011), is also expressed through the comment. Pre-service teachers' reflective thinking remained at a reaction level and reflected a social presence in the interaction with peers (Deng & Yuen, 2011; Surbeck et al., 1991).

3.1.2. *Prescriptive*

Prescriptive refers to the pedagogical connections and descriptions of the processes of teacher practice. Pre-service teachers focused on the strategies or activities they experienced during instruction with the professor and in their cooperating teacher's classroom, or the application of their learning. Their comments focused on the mechanistic aspects of teaching; this means that the instructional process was acknowledged. For example, a pre-service teacher expressed:

I think your insight about classroom management is very useful. I am very sensitive to this lens because it is one of my weak areas! I totally agree that it really has an effect on student achievement. If a class has little to no classroom management, then students think they can get away with whatever, or don't take your class seriously. (I have witnessed this in my CT's class) If students know there are consequences, or at least an expectation from them on how things should and should go inside your classroom, you will definitely see a difference in their participation and achievement level (or at least I would hope so!)

This comment, although briefly elaborated, demonstrates how classroom episodes can help the individual to see theory in action and recognize the effectiveness of its application. The actual classroom experience enhanced understanding of the theory and connected it to the practice observed during instruction (Yang, 2009). Another pre-service teacher expressed:

A powerful learning experience I had this week was during our mentee session on Thursday. My mentee was gone for the day so I volunteered to work with several other students. A group of both mentors and mentees worked as a "study group" to complete and review biology slides from a powerpoint and workbook pages. During this time we were discussing and defining vocabulary words. My powerful learning experience occurred when we (mentors) began relating things they (mentees) had or knew about to the vocabulary words and trying to give them easy ways of remembering. For example, to explain the word "adapt" we related it to their clothing and "adapting" what we wear to the weather during the day. This really worked and really helped them understand and remember the concepts.

This comment focuses more on the "doing" of teaching practice and the success that was perceived and less on the importance of the teaching behaviors and why it seemed to be effective. The comment fails to explain how critical communication skills are necessary for effective teaching and the need for a variety of strategies to meet students' thinking, understanding, and processing abilities. As Farrell (2004) affirms, much is learned "from reflecting on that experience" (p. 7); however, the self-expression (Deng & Yuen, 2011) reflects technical reflection (Taggart & Wilson, 1998) and fails to move beyond a superficial mode of expression similar to the findings of Liakopoulou (2012). Another pre-service teacher expressed:

I learned that there are very sensitive people/students and that we, as teachers, should be very flexible and bend to their needs. In the hallway I encountered a young girl who was sitting in the hallway crying. I contemplated going to talk to her at first because what popped in my head was, "It's none of your business." Though, it struck me that I am now a professional, and I need to step in and be an authority figure. I bent down on my knees and touched her leg to get her attention. She looked at me and seemed confused and very upset. I asked, "Are you okay?" and she replied, "Yes I am fine." I then asked her one more time if she was okay and if she needed me to get someone, and she still answered in the same fashion. The bell rung then, causing the students to go to their classes. I later saw the same girl walking down the hall with a note in her hand, going to the office. I wish I had known a better way to get her to communicate with me.

This comment conveys an emergent reflection-in-action resulting from the pre-service teachers' practice in context (Schon, 1983). The unexpected episode with a random student at the school provided an opportunity that forced the pre-service teacher to think about her professional role as an aspiring teacher and then responded hesitantly, in concert with Dewey's (1933) view of reflective thinking. This pre-service teacher contemplated whether intervention was appropriate at the time of the incident and continued to think about the actions upon seeing the student again in the hallway. A caring attitude is reflected in this comment because the pre-service teacher was genuinely interested in helping the emotionally distressed student, but fails to comment on the action needed to help resolve the situation. In other words, the comment fails to demonstrate critical reflection (Nelson & Sadler, 2013) when faced with the students' emotional episode. While the reflection is descriptive in nature, similar to the findings of Cohen-Sayag and Fischl (2012), the comment fails to convey a need to inquire further regarding strategies to address students in a state of emotional dissonance.

The course readings and classroom discussions helped pre-service teachers to link theory to practice and facilitated self-assessment of their thinking that reflected a moral dimension.

I am excited about all the techniques and creative ways we are learning about how to deliver the material to our students. Learning effective ways to turn dry material into something entertaining will come in handy once I enter the classroom.

This comment is a compliant reaction (Surbeck et al., 1991) to what was experienced during instruction with the professor and focuses on technical expertise. This is important because it further supports the notion that pre-service teachers need to be critical consumers of knowledge and must be taught how to reflect critically about the information presented. Accepting what is taught as experienced and failing to question the effectiveness in a different context shows a lack of critical reflection. "Teachers must be able to self-evaluate their use of strategies related to the various elements of instruction" (Hrevnack, 2011, p. 81). This descriptive comment accepts the teaching behavior as a panacea to accomplish future instructional outcomes. Aspiring teachers need to understand that teaching is complex and the performance aspect is only one component of the instructional process. Liakopoulou (2012) also reported that pre-service teachers failed to question the relevancy of their learning to current practice.

3.1.3. *Self-assessment*

Self-assessment refers to personal traits that identify the individual as a teacher. Some pre-service teachers reflected about their dispositions. This was significant because this cohort of pre-service teachers had the same clinical opportunities, but their varied experiences served to develop self-awareness about dispositions. A pre-service teacher reported:

I lack patience with female mentees when they try giving me attitude. I am not sure how to handle their attitude or lack of interest in help. The male mentee I worked with on Thursday really tried to feel out his boundaries by standing up, talking, and trying to walk away from me while we were going to the class to get a book. I was able to make him obey though just by telling him what to do.

This comment is focused on the self as the teacher and limited in discussing the factors that influence the teaching context. While this individual acknowledges the lack of patience, the blame is on the student. The pre-service teacher failed to recognize that the method or approach used in this situation may have been a cause of the problem. Furthermore, few pre-service teachers offered alternatives to the challenges they documented during the field experience.

Some reflective comments conveyed a moral perspective (Farrell, 2004). As a pre-service teacher acknowledged:

This week I learned that I need to spend more time examining my own culture before I can begin to fully understand others. I need to spend some time to reflect on my life experiences and determine what my culture is and what aspects of it I want to bring into my classroom. Also, I need to determine which aspects I don't want to bring into my class.

This is a powerful comment because it conveys some critical thinking about the self and the values and beliefs that frame this aspiring teacher's identity. This individual conveys a culturally responsive attitude because there is a need "to foster a culture for learning that embraces the student as a focal point" of instruction (Garza, 2010–2011, p. 58). This individual realized how easy it is to impose one's personal value system on the students, but more importantly, the thinking beyond the immediate context suggests an influence on the professional lens (Caldarella, Gomm, Shatzer, & Wall, 2010).

I observed a classroom where the teacher wasn't involved in the student learning and simply presented the assignment to the students. I really watched to see how the students behaved and what occurred in the classroom during that time so that I could reflect and think about how I plan to approach lessons and assignments. I was able to observe certain actions take place that I hope to avoid as much as possible in my teaching career and I was able to self-reflect on what kind of teacher I want to be.

Although this pre-service teacher highlighted the effectiveness of instruction or teacher behavior, the thinking failed to examine the overall instructional process and how it affected students' learning in this context (Jay & Johnson, 2002). The focus remained on the technical aspects (Taggart & Wilson, 1998) of the teacher's delivery of instruction and the influence on student behavior. This comment fails to address "one of the biggest challenges that teachers encounter is keeping student involved, interested, and learning" (Price & Nelson, 2014, p. 43). Thus, pre-service teachers need to also realize that critical teaching skills include planning meaningful lessons and activities, varied modes of instructional delivery, and assessment. However, the actual classroom experience forced this pre-service teacher to examine her mental model about teaching and student learning at a technical level of reflection (Taggart & Wilson, 1998). Our findings support previous research (Cohen-Sayag & Fischl, 2012; Liakopoulou, 2012), reporting pre-service teachers' reflective thinking as failing to move beyond the description of what was observed to a deeper analysis of why events occurred in the context of teaching and learning.

4. Limitations

Our investigation highlighted pre-service teachers' perceptions of their reflective thinking through blogging. While the findings add to the extant literature on pre-service teachers' reflective thinking, caution should be taken when generalizing the conclusions from this study due to the small sample size and the gathering of data from one secondary undergraduate field-based cohort. Pre-service teachers' instructional context and field-based experiences in other universities and geographical areas may have different perspectives than those reported in this paper. Furthermore, although all pre-service teachers blogged weekly guided by structured prompts, their motivation to thoughtfully respond to the prompts may have been influenced by their grade for this required aspect of the curriculum. In other words, the academic reward may have influenced a student to invest more or less time and effort to complete the weekly blog, rather than for the reflective benefits afforded through this task. This could possibly convey the quality and extent of pre-service teachers' genuine interest in reflecting on their pedagogy. Since teachers are not rewarded for their reflective practice in real life, further research could examine the relationship between pedagogical connections and the nature of reflective thinking without a grade attached to this type of task.

5. Final thoughts

Whereas pre-service teachers' thinking may be influenced by factors such as educational experiences, background, values, beliefs, and dispositions, reflective practice can serve to challenge and reinforce prior knowledge about the cognitive, social, emotional, and political aspects related to teaching. This study adds to the extant literature on pre-service teachers' reflective thinking in several aspects. First, the majority of the comments received from classmates through peer interaction conveyed emotional support, positive reinforcement, agreement, or advice. Although, reflective comments conveyed a

descriptive nature of their thinking, this form of interaction within a community of learners is in concert with the findings of Miller and Williams (2013). Blogging provided a space for pre-service teachers to realize that other cohort members were wrestling with the same emotional experiences throughout the semester and were able to connect with one another without feeling isolated on an emotional level. It is interesting to note that peer comments never provided alternatives or challenged the behavior or actions expressed in the blog postings. This might indicate the harmony of the culture for learning fostered by the professor, but it also suggests that pre-service teachers need to practice inquiry as a way to foster personal and peer growth and professional development. Improving pre-service teachers' capacity needs the instructor's deliberate guidance in helping them to practice being critical of each other, thereby promoting a critical level of reflective thinking. As Hourani (2013) affirms, "enhancing self-observation and meta-cognitive skills needs to be integrated in the course work to equip with students with means to reflect on their own learning" (2013, p. 28). Blogging, used as a formative assessment tool in a variety of contexts, can be a powerful medium used to promote this type of self- and critical reflection in a safe community of learners and assistance from others in addition to the instructor.

Pre-service teachers have the freedom to blog their personal thoughts by frequently responding to guiding questions designed to promote their reflective thinking. Field experiences before student teaching provide an opportunity for pre-service teachers to transition from a student to a professional, as they interact with students and professionals in a school setting, but do they know how to make meaning from these encounters? As Meister and Jenks (2000) suggest, "preservice teachers need the knowledge, skills, and dispositions that help them examine their own beliefs, values, and personal experiences they bring to their understanding of teaching and learning" (p. 10). Therefore, teacher educators need to design and structure field experiences that will help future educators to understand better the complex dynamics associated with teaching. Then, using blogs may be a safe avenue to help pre-service teachers convey their thoughts about their learning experiences and to connect with their peers on a cognitive and affective level, promoting reflective thinking, as suggested by Hrevnack (2011).

Second, although Zeichner and Liston (1996) assert that "reflective teachers think both about how they frame and then how to solve the problem at hand" (5), it is clear that pre-service teachers in our study reflected primarily on their observations and their learning through the consumption of knowledge. The majority of the pre-service teachers commented on classroom learning and course readings without providing a depth of understanding (Cohen-Sayag & Fischl, 2012; Surbeck et al., 1991). In other words, reflective comments failed to express the effect on their personal beliefs, values, and dispositions about teaching. In addition, pre-service teachers failed to question what they observed in the classroom; perhaps, this was a result of their inexperience and lack of knowledge of effective pedagogical approaches or were unaccustomed to questioning as a form of reflective thinking. However, comments did indicate that their pedagogical knowledge and skills and dispositions were enhanced as a result of the field experience. Through blogging, pre-service teachers were forced to think about their learning through a professional lens. This is critical, given that this was the first opportunity for pre-service teachers to authentically experience various aspects of teaching as they transitioned from a student to a professional while interacting with high school adolescents and educators.

Furthermore, our findings suggest that blogging is a valid tool that can facilitate pre-service teachers' reflective thinking about their perceived learning within a community of learners. Similar to the findings of Cohen-Sayag and Fischl (2012), the structured format for pre-service teachers' blogging served as a guide for participants to comment on their experiences, to interact within the community of learners, and to convey their learning during the field practicum. This was useful because it provided a space for permanent documentation of learning experiences over time that can be easily accessed and stored indefinitely.

Finally, blog reflections indicated pre-service teachers' perceptions of their growth and development as they superficially linked theory to practice. Pre-service teachers were engaged as active learners through the application of their course learning, which subsequently promoted their social and cognitive growth as aspiring teachers (Schmidt, Marks, & Derrico, 2004). They were forced to think about

how their course learning supported their experiences while immersed in a real-life setting. Although pre-service teachers' comments reflected that "hands-on" experience engaged them in the learning process, they failed to explain new learning based on theory (Liakopoulou, 2012). Whereas some pre-service teachers demonstrated the ability to provide limited depth in their reflective comments by deconstructing the phenomenon, our findings indicate that we as teacher educators still need to help our pre-service teachers to examine critically their developing beliefs about the dynamics of teaching as a way to foster their professional growth (Walkington, 2005). For example, pre-service teachers needed to explain why certain strategies or approaches were more effective than others and what alternatives might be better for a particular context. "When considering teaching reflectivity, it is also possible to integrate the learning of reflection and the teaching of knowledge and skills into a cohesive educational experience by facilitating students' reflectivity and by helping them to see pedagogical alternatives. This requires opportunity, time, and assistance from others" (Kaasila & Lauriala, 2012, p. 86). Our findings also suggest that facilitating structured reflective thinking for pre-service teachers, while immersed in an authentic educational setting, has the potential to foster a nascent understanding of teaching and learning. Our study supports the need for deliberate reflection about teaching and learning as an approach that has the potential to foster pre-service teachers' growth and professional development before the student teaching phase of their preparation.

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