Reflection in alignment to professional standards: What did the student teachers highlight?

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Abstract

This study investigates the professional development of elementary student teachers in a teacher education program. Student teaching is a process for pre-service teachers to apply learning in an authentic school context, and one critical aspect of professional development is through reflection. The participants were primarily examined through their weekly reflections on teaching and learning experiences over an eight-week period. Using the state Standards for the Teaching Profession as a framework, the student teachers chose to reflect on topics they were most interested in exploring. Results indicated that the participants gave predominant attention to classroom management; the standards that received the least reflection were organizing curriculum and planning instruction. Analysis of the reflection journals also revealed how the student teachers grew as individuals and in interaction with others in a learning community. Based on the results, implications for teacher education are proposed. Limitations are also discussed.

Keywords

Revisions

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Abstract

This study investigates the professional development of elementary student teachers in a teacher education program. Student teaching is a process for pre-service teachers to apply learning in an authentic school context, and one critical aspect of professional development is through reflection. The participants were primarily examined through their weekly reflections on teaching and learning experiences over an eight-week period. Using the state Standards for the Teaching Profession as a framework, the student teachers chose to reflect on topics they were most interested in exploring. Results indicated that the participants gave predominant attention to classroom management; the standards that received the least reflection were organizing curriculum and planning instruction. Analysis of the reflection journals also revealed how the student teachers grew as individuals and in interaction with others in a learning community. Based on the results, implications for teacher education are proposed. Limitations are also discussed.

Keywords: professional development, collaboration, elementary level, student teaching

Introduction

Reflection has drawn the attention of researchers and practitioners in the exploration of teacher education around the world (Choy et al., 2017; Davis, 2006; Hubbs & Brand, 2010; Lai & Calandra, 2007; Lee, 2005; Schon, 1983; Zeichner & Liu, 2010). Pre-service teachers learn to apply their learning of theories and methodology in an authentic context by working directly with school children. They must learn to deal with issues and challenges and make appropriate decisions in performing various tasks. In teacher preparation, candidates are required to analyze and reflect on their experiences, learn from mistakes, and adjust for improvement. Reflection goes beyond recording what happens during student teaching and requires critical analysis of issues and problem solving to develop competence (Freese, 2006; Schon, 1983; Zeichner & Liu, 2010). As Dewey (1933) stated, reflection does not come naturally but must be taught. Rodgers (2002) summarized Dewey's concept of reflection by highlighting the meaning-making process, where the learner moves and develops from one experience into the next with a deeper understanding of its relationships in the context of a community for the personal and intellectual growth of oneself and of others.

Reflection is essential for student teachers when they make the transition from students who primarily observe and follow directions of their university instructors to classroom teachers who

take initiative, address issues, and make decisions (Freese, 2006). They are required to reflect on their student teaching experiences, specified in student teaching evaluations or professional standards. Through reflection, student teachers learn to analyze and evaluate their practice as autonomous learners and make appropriate decisions to solve problems and improve practice (Schon, 1983; Zeichner & Liu, 2010).

Moreover, student teaching is one of the most difficult experiences to understand (Valencia et al., 2009). Thus, more research is needed to better comprehend how student teachers demonstrate their on-going development aligned to professional standards through reflecting on their experiences, dealing with issues or challenges, and making necessary adjustments for improvement. They develop as individuals through practice as well as through interactions with others, especially mentor teachers. To complete student teaching successfully, candidates must have a thorough understanding of professional standards to set up goals. Reflection serves as a meaningful and valuable way for student teachers to self-monitor their growth in reaching their professional goals.

The purpose of this study was to examine how elementary student teachers used weekly reflection journals to document the development of their teaching practices which were aligned to the Standards of the Teaching Profession (California Commission on Teacher Credentialing, 2009). This set of standards was chosen because it was applied in guiding and evaluating student teachers in the local context.

Literature Review

Reflection is considered critical in the field of teaching and teacher education; it is a thinking process that involves a transformation from experienced incoherence to making the situation coherent again (Clara, 2015). This process is especially important in the development of teacher candidates when they explore how to teach effectively in an authentic classroom context. The literature highlights the impact of pre-service teachers' reflection on their professional development at different stages of a teacher preparation program; aspects range from content, structure, self-identity, and the role of mentor teachers (Davis, 2006; Dietz & Davis, 2009; Freese, 2006; Hodgins, 2014; Hubbs & Brand, 2010; Lai & Calandra, 2007; Lee, 2005; Shepherd & Hannafin, 2009; Stevenson & Cain, 2013).

The topic of reflection was examined from the perspective of providing a structure to improve the quality of reflection (Hubbs & Brand, 2010; Lai & Calandra, 2007; Lee, 2005). According to Lai and Calandra (2007), pre-service teachers can produce effective reflection journals when they are provided with clear expectations in principles and conceptual framework. A positive relationship was found between structured reflective writing and quality in reflection. Similarly, the use of a structure or matrix such as the Hubbs & Brand (2010) framework to support reflection was proposed "for students and instructors to discuss, critique, and analyze students' reflective journal entry" (p. 69). The matrix contained a content-process continuum and a superficial-reflective continuum to provide support for reflection. While Hubbs and Brand (2010) cautioned the use of the matrix for assessment of reflection, other studies (Bracken & Bryan, 2010; Lee, 2005) highlighted assessment or self-assessment of reflective practice. Lee (2005) conducted a study including three participating pre-service teachers during one month of field experience in middle and high school settings. Reflection was assessed from two perspectives: content and depth. The content of reflective thinking was related to the pre-service teachers' main concerns expressed

through oral or written communication. The depth of thinking included 3 levels: Recall (R1), Rationalization (R2) and Reflectivity (R3); R1 represented descriptions of experiences at the lowest level, whereas R3 detailed approaches with a plan for improvement at the highest level of thinking. It is necessary for candidates to make observations or record their practices in reflection. However, they can truly benefit from deeper level reflection when they analyze/reflect on what worked, and did not work, before making decisions and taking actions (Lee, 2005).

Reflection can only be done when student teachers gain teaching experiences through working with students in a classroom context. Each student teacher is typically assigned to a classroom under the guidance of at least one mentor teacher. The mentor plays a crucial role in the experiences and professional development of a student teacher (Izadinia, 2015; Jaspers et al., 2014; Orland-Barak & Hasin, 2010; Ticknor, 2014; Weasmer & Woods, 2003). Due to the impact of mentors, student teachers' confidence and professional identity can be considerably shaped by the mentor-mentee relationship (Izadinia, 2015). The attitude and interpersonal skills of a mentor can affect how a student teacher proceeds from an incoherent situation to a coherent situation by examining their teaching practice through reflection.

Mentors are often experienced teachers who model responsibilities in, and outside of, the classroom. Despite the differences in the contexts of teaching or non-teaching practice, effective mentors share common perspectives including interpersonal relationship and reflexivity (Orland-Barak & Hasin, 2010). The role of mentor teachers can be complex when they try to find a balance between being responsible for their own pupils' well-being and supporting the student teacher in professional development (Jaspers et al., 2014). However, the relationship between a mentor and a student teacher can evolve from being one-sided, if the student teacher contributes and actively engages in collaboration. Student teachers learn from/with their mentors, and through collaboration they may also offer support to the in-service teachers' professional development (Liu, 2016). While mentors spend time to guide their mentees, student teachers can also share the teaching responsibilities and support pupils' learning.

When student teachers work with mentors, they engage in reflective practice to achieve professional growth. Several case studies (Atiles & Pinholster, 2013; Freese, 2006; Fryer, 2013; Köksal & Genç, 2019) have been conducted on the candidates' student teaching reflection. In a case study, Freese (2006) examined the development of one pre-service teacher during the program for over two years. A collection of multiple data was obtained to analyze the participant's growth in the program, with student teaching and an internship scheduled in the second year. The program had a goal to support their students to construct knowledge, reflect on their practices, and collaborate with others to become effective teachers. At the end of the program, the participant realized that a journey from a teacher candidate to a teacher was filled with challenges, and his reflection served to help him find his professional identity, deal with issues and obstacles, and solve problems for the transition into the teaching profession. This data collection created an opportunity to monitor the progress that the candidate made throughout the program by analyzing his reflection. In another study, Köksal & Genç (2019) observed eight English Language student teachers who were enrolled in one 14-week term, which consisted of six hours per week of observation, writing lesson plans, and teaching. The student teachers were advised to write reflection journals by topics such as teaching methods and the challenges they encountered. The study revealed that the participants experienced challenges in classroom management, technology, and meeting the needs of students at different levels. However, they did not "seem to solve the

problems" and "looked to accept the situation as it was hopeless" (p. 906).

Other case studies (Atiles & Pinholster, 2013; Fryer, 2013) exclusively focused on studying reflection of student teachers at the elementary level. Atiles & Pinholster (2013) conducted a case study where the participating student teacher kept two types of journals. The *professional* journal featured a simple listing of lessons or brief descriptions of strategies to apply at school. Her *personal* journal at home, on the other hand, was about the struggles she encountered or experienced, self-evaluation of her performance, and interaction with the students. By keeping both journals, the student teacher was able to reflect on her frustrations, struggles, and fears, which was an indispensable part of the learning process.

Furthermore, in a study of 12 elementary student teachers, Fryer (2013) discussed with the participants how to write a reflection and provided two lists of prompts or questions for journal writing. However, an analysis of the student teachers' journals showed scores in the low to middle range regarding their level of reflection. Fryer (2013) contended that to increase the level of reflection, purposeful workshops should be provided to guide student teachers to stay focused and delve deeper in reflection. Such guidance could prepare student teachers to engage in reflective thinking and improve reflectivity as they move through their student teaching experiences.

In summary, publications are numerous on the reflection of pre-service teachers both at different stages of their teacher education programs as well as in reflection factors such as structure, role of mentor teachers, instructional practices, and assessment (Davis, 2006; Dietz & Davis, 2009; Freese, 2006; Hodgins, 2014; Hubbs & Brand, 2010; Lai & Calandra, 2007; Lee, 2005; Shepherd & Hannafin, 2009; Stevenson & Cain, 2013). However, studies on student teaching at the elementary level are limited and have a small sample size, ranging from one to sixteen participants. Using the same sampling method, inclusion of more student teachers in a study implies a more comprehensive data collection, which may lead to a better understanding of the target population and is an identified area of need (Fryer, 2013). Another need or void yet to address in the literature is to study how elementary student teachers teach and develop to meet professional standards revealed through their reflections. The purposes of the professional standards are to prompt reflection on teaching and learning, formulate professional goals, and assess the progress of teaching practice towards those professional goals (California Commission on Teacher Credentialing, 2009). Reflection can be more meaningful and better organized for reflectivity when it is done in the context of meeting professional goals. Student teachers need to have a clear understanding of professional expectations before they can explore ways to meet the goals in the process (Fryer, 2013; Hubbs & Brand, 2010; Lai & Calandra, 2007; Lee, 2005). Moreover, student teachers are members of a learning community. While the role of mentor teachers and others should not be overlooked, further investigation of the role and impact of student teachers, beyond simple receivers of information and support, is also warranted (Liu, 2016).

Methods

The design of this study was built on a literature review of theories, premises, and research on reflection in teacher education, including student teaching. Reflection must be taught for a learner to engage in a meaning-making process (Dewey, 1933; Rodgers, 2002). Pre-service teachers learn to gradually make connections to develop and grow professionally throughout the student teaching experience. Their reflection journals are not only a means to document the learning process but

also a goal itself as specified in the professional standards (California Commission on Teacher Credentialing, 2009). Secondly, some structures (Hubbs & Brand, 2010; Lai & Calandra, 2007) can be helpful to guide student teachers to examine a phenomenon for a deeper level understanding of relationships and ideas through making connections (Rodgers, 2002). A structure or framework can help student teachers stay focused on the goals aligned with the professional evaluation criteria. The study adopted the Standards for the Teaching Profession (California Commission on Teacher Credentialing, 2009) and a reflection journal template (Lee, 2005) which served to promote deeper reflective thinking.

The purpose of this study was to analyze the learning process of K-5 student teachers through an examination of their weekly reflection journals written over a period of eight weeks. Their reflection was examined along with other types of data such as observations, debriefing, and evaluations. The student teachers were guided to align their journals to the Standards for the Teaching Profession (California Commission on Teacher Credentialing, 2009). The six standards extend from classroom management, assessment to developing as a professional educator. The participants were required to use a reflection journal template, which provided a structure for specific expectations (Hubbs & Brand, 2010; Lai & Calandra, 2007) and encouraged critical thinking and problem solving to move beyond description and toward more productive reflection (Davis, 2006; Lee, 2005). Student teaching is a dynamic and complex process (Valencia et al., 2009) that involves interaction with others (Dewey, 1933; Izadinia, 2015; Rodgers, 2002). So, attention given to others in the learning community disclosed in the reflection was also a major aspect to study. Specifically, two research questions were investigated: a) What professional standard-based topics were the student teachers most interested in exploring? b) How did the student teachers practice collaboration with others throughout the assignment as revealed in their reflection?

A mixed methods approach (Johnson & Christensen, 2017) was applied with analyses of quantitative and qualitative data. Multiple sets of data at different times or places, directly from or about the participants were collected and analyzed to answer the research questions. Data triangulation (Johnson & Christensen, 2017) was used to address data collection from different groups such as the mentor teachers and principals, weekly data collection throughout eight weeks, and multiple types of data including observations, debriefings, evaluations, and meetings in addition to weekly reflection journals. Additionally, ethical aspects were considered, and the participants were informed: a) their participation would not affect their course grade, b) confidentiality and anonymity would be assured, and c) they would be able to withdraw from the research at any time. Signed consent forms were collected from the participants and institutional approval for conducting the study was also granted.

Participants

A total of 31 elementary student teachers in the Teacher Education Program of a public university voluntarily participated in the study. The group had an age mean of 24 and was ethnically mixed with Caucasian, Asian, Black, and Hispanic participants. In terms of gender, females dominated the composition which consisted of 28 women and three men. Most of the participants had completed all other course requirements when they entered student teaching, but some took their last methodology course concurrently with student teaching. They were required to complete the

first eight weeks of student teaching by following their mentor teacher's full day schedule at a placement school.

Data Collection

Before reporting to their assigned school, the participants were introduced to the Standards for the Teaching Profession (California Commission on Teacher Credentialing, 2009), the evaluation criteria for their student teaching experience. There were six standards: 1) Engaging and Supporting All Students in Learning, 2) Creating and Maintaining Effective Environment for Student Learning, 3) Understanding and Organizing Subject Matter for Student Learning, 4) Planning Instruction and Designing Learning Experiences for All Students, 5) Assessing Students for Learning, and 6) Developing as a Professional Educator. The participants discussed and practiced how to address the standards in reflecting on their field-based practice with illustrations and scenarios to develop an understanding of the goals and expectations.

To guide the participants to go beyond description to develop critical thinking and problem-solving capacity, a three-part reflection journal template was introduced and discussed. Part 1 was *Observations/Actions* for the student teachers to describe what they observed, did or taught in an instructional or non-instructional setting. In Part 2, *Analysis/Discussion*, they should share their thoughts by evaluating what happened and their learning related to the experience. Then, they moved onto Part 3, *Next Step* to make a plan for what to do next to continue the effective practices and address the issues highlighted in *Discussion and Analysis*. The template provided a structure to guide the student teachers to reflect on their practice critically and solve problems. They were prompted to go beyond "*Recall*" and address *Reflectivity* for the highest level of reflection (Lee, 2005) with a plan for the *Next Step* to improve their teaching practice.

While informal reflection was on-going, the student teachers wrote one journal entry per week, over an eight-week period when working with their mentor teacher. Therefore, the total number of journals collected was 248. In the Student Teaching Orientation, along with an overview of the Standards for the Teaching Profession, the assignment of reflection journals was specified. The participants understood that these standards would be used in the evaluation of their student teaching performance. Therefore, they were expected to demonstrate and discuss their growth by reflecting on each of the six areas.

In addition to the reflection journals, other data about the participants were also collected: a) lesson plans and a unit of study that the student teachers developed, b) classroom observation with debriefing and field notes written by a university supervisor, c) notes about meetings between a university supervisor and a mentor teacher and/or student teacher as well as others, and d) summative assessments of the student teachers. These sets of data were used to provide a context to enrich discussion and triangulate data as appropriate.

Data Processing Methods

Quantitative data were summarized to yield frequency of the standards that the student teachers selected or specified in writing reflection journals. Each reflection journal was only tagged with one of the standards. The data were presented by week chronologically and by the professional standards to display a pattern and changes that occurred during the eight weeks. Qualitative data

analysis consisted of a cyclical and iterative coding process. First, the collection of multiple data sources was segmented and labeled with *NVivo* codes. Next, through repeated readings, overlap among codes was reduced by clustering similar codes together. Ultimately, numerous codes collapsed and grouped into a few broad themes. Tables were utilized to organize and display the data summary or distribution as appropriate. Samples were selected to illustrate, highlight, or elaborate the data presented in a table or discussion in context.

Findings

By the end of the eight-week assignment, each student teacher completed eight reflection journals. Some of them dated their journal entries while others labeled the number of the week in which a journal was written. The length of most of the entries was approximately 500 words, with the longest journal up totaling 1,141 words. In general, all participants were able to follow the journal template and provide a description of what they observed or did. However, differences were found in the depth of their critical reflection in the *Discussion/Analysis* and *Next Step* section. For example, some student teachers proposed a detailed plan in the *Next Step* by clarifying what to continue and what to do differently for improvement with justifications; while others planned to repeat what was observed or practiced in some of the journal entries.

Research Question 1: Selection of Professional Standards in Writing Reflection

A summary of the standard selection in the journal collection can be found in Table 1. All the standards were written about across the eight weeks. However, standards were not evenly distributed. The standard that the candidates most frequently selected for reflection was #2: *Creating and Maintaining an Effective Environment for Students*. Specifically, 31 *(50%)* out of the 62 entries during the first two weeks of the assignment were dedicated to Standard 2.

To further explore the focused attention given to Standard 2, the narrative reflections were analyzed and summarized in Table 2. Examples from these reflections included: holding students' attention during teaching (33%), observation of a mentor teacher's practice (21%), relationships with substitute teachers (16%), working with parents (15%), and behavior of individual students (15%). The examples for each aspect were either a quotation or a summary of selected reflection. About one-third of journal entries shared a theme of discussing how to draw and hold students' attention when the student teachers taught a lesson or mini-lesson. The participants also paid close attention to their mentor teacher's practice of maintaining a positive learning environment. They highlighted how the mentor teachers applied a management system of rewards and consequences to promote appropriate behavior as well as what strategies they utilized to get the students refocused or to make a transition from one activity to another. The journals on these above two aspects made up over half of all entries written on Standard 2. Data indicated that the participants were challenged to keep the pupils engaged in learning or to address off-task/disruptive behavior during instruction. They reflected on this area of need and were active in exploring ways for improvement. The other entries were related to working with others such as a substitute teacher or parents. Finally, the student teachers focused on how to work better with students, especially those who experienced challenges including behavior issues, to improve their engagement and performance in classroom learning activities.

Table 1. Summary of Selected Standards for Reflection Journals

Week	Standard 1	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6
1	3	20	1	2	3	2
2	7	11	3	1	5	4
3	5	5	4	2	9	6
4	5	6	1	6	6	7
5	8	3	1	4	8	7
6	3	6	5	7	6	4
7	6	2	8	5	3	7
8	7	3	3	5	6	7
Subtotal	*44*	*56*	*26*	*32*	*46*	*44*

Note. *N* = 31; Total number of reflection journal entries = 248

Before student teachers can engage elementary students in learning, they must become familiar with routines and procedures and develop competence in applying a classroom management system. Disruptive or off-task behavior of the elementary students stood out in the student teachers' evaluation of classroom management disclosed through not only reflection journals but also in meetings and one-on-one debriefings. These findings confirm results from another study where pre-service teachers were challenged by classroom management in a Turkish program (Köksal & Genç, 2019). However, the data revealed that the participants in this study made improvement in classroom management after gaining more experiences using problem solving skills. Furthermore, the data of reflection journals and observations indicate that the causes of distraction were related to other standards such as the use of strategies to actively engage the students in learning. In other words, when some students acted out or lost focus during a lesson, it was not really because they forgot or chose to disregard the classroom rules but because the lesson was not taught at an appropriate level for them.

In comparison to the number of entries on Standard 2, the most cited standard, less than half of the journal entries were written on Standard 3: Understanding and Organizing Subject Matter Knowledge for Student Learning. During the eight weeks, the entire group of student teachers produced a total of 26 (10%) entries on Standard 3, as compared to 56 (23%) entries on Standard 2. Similarly, Standard 4: Planning Instruction and Designing Learning Experiences for All Students was ranked second to last on the standard selection summary list. This standard, among others, is related to developing, sequencing, and modifying instructional activities and materials for maximal learning. Furthermore, Standard 4 was the least selected for reflection during the first three weeks of the assignment, with only five entries written by the group.

Table 2: Aspects of Creating and Maintaining an Effective Environment for Students

Aspect	Example	%
Holding students' attention in teaching	- "I did a phonics section with the AM kindergarten group. I totally lost control of them and I asked the teacher to step in."… - It worked well when a student teacher used the same management strategies without the mentor's presence.	33%
Observation of mentor teacher's practice	- "One of the management tools that she uses is a card/chart system."… - "The first practice I noticed was counting down"…	21%
Relationships with substitute teachers	- Lack of collaboration between a substitute teacher and student teacher - Collaboration between a substitute teacher and student teacher to set up and reinforce rules	16%
Working with parents	- "Dan's father walked in to search for a lost jacket. I took this time to introduce myself in person. He let me know that"…	15%
Behavior of individual students	- "I noticed D (a student) get up from his place on the rug and move back behind the rest of the class, … he was breathing deeply and holding back tears."…	15%

Research Question 2: Interaction With Others in a Learning Community

Due to the nature of student teaching or the teaching profession, student teachers must work with others to learn how to assume a variety of responsibilities required of a teacher. At the orientation held the week before their reporting to an assigned school, all student teachers considered it crucial to develop a positive relationship with others to ensure successful student teaching. The topic of building collaboration was also revisited as needed during student teaching seminars. Although the student teachers were not specifically required to write about others or collaboration in each journal entry, they had opportunities to discuss the importance of teamwork repeatedly. Also, *collaboration* was included on the suggested list of journal topics.

A summary of how the student teachers worked with others, as revealed in their reflection journals, can be found in Table 3. At times, student teachers reflected that they collaborated with different groups of people in writing one journal entry. All of these experiences were tabulated, which explains why the total number of tallies for types of people is greater than 248. In addition to whom they worked with, the participants also discussed how they worked with others during the eight weeks; both in teaching and non-teaching contexts. The individuals they highlighted in the reflection were grouped by parents, mentors, individual students with unique needs, staff, and others. Each of these groups was defined as follows:

- Parents: Parents or guardians of the elementary students in an assigned classroom of a mentor teacher who hosted a student teacher.
- Mentor: A K-5 mentor teacher who worked with a student teacher on a full-time basis in his/her classroom during the eight weeks.
- Staff: Other teachers of the same grade or different grades at an assigned school including specialists and the principal (The interaction with the staff occurred primarily outside of a classroom or in a non-teaching context of the school).
- Individual Students: Any elementary students who caught the attention of a student teacher because of their special needs or challenges in behavior or learning.
- Others: A substitute teacher (when a mentor was out), fellow student teachers or university supervisor.

Collaboration with a mentor teacher was cited most frequently, with 114 (41%) entries. Data in this study confirmed findings from other researchers that a mentor plays an indispensable role in the experiences and professional development of a student teacher (Jaspers et al., 2014; Orland-Barak & Hasin, 2010; Ticknor, 2014). Overall, the participants worked with their mentor teachers in different ways during student teaching. At the beginning of the assignment, they reported more about their mentors' teaching practice. When the student teacher began to teach, their mentor teachers intervened or interjected as needed. Sometimes, a mentor took over momentarily to address issues in student behavior or content instruction before a student teacher was able to continue. Beyond teaching, the student teachers also learned to work with others such as parents, staff, and specialists through their mentor's modeling and facilitation. As the student teachers moved further into the assignment, the collaborative model gradually shifted to equal partnership when they had an opportunity to take initiative and contribute more to lesson planning, teaching, and other aspects.

Table 3. Who Did the Student Teachers Work With or Highlight in Their Reflection?

Week	Parent	Mentor	Staff	Individual Student	Other	No One
1	1	24	3	0	1	2
2	5	18	3	0	1	4
3	3	12	7	3	2	6
4	3	11	6	1	5	9
5	2	18	5	3	1	15
6	1	13	4	3	2	10
7	2	7	6	3	0	17
8	2	11	2	1	1	16
Subtotal	*19*	*114*	*36*	*14*	*13*	*79*

Note. $N = 31$; Total number of collaborative activities noted = 275 (as cited in the 248 journal entries)

The role of mentor teachers in the student teaching experience should not be underestimated (Izadinia, 2015; Jaspers et al., 2014). The student teachers in this study produced significantly more reflection journals about working with their mentor teachers in the first two than the last two weeks of the assignment. The decrease of the presence of the mentor teachers and others in the reflection journals written during the last two weeks of the assignment may signal increased competence of the student teachers. Towards the end of the assignment, they took over more teaching responsibilities along with the required solo teaching of at least one week. Observations of the student teachers in the last few weeks indicated that they worked collaboratively with their mentors but took on more responsibilities. The mentors played a supportive role such as pulling a small group of students to help them catch up in or outside of the classroom. However, the participants did not emphasize their teamwork as much as they did in the reflection of the first two weeks. The goal of student teaching is for student teachers to grow independence and get prepared for solo teaching in their own future classroom. Towards the end of student teaching, they did not depend on their mentor as much as they did in the beginning. Although they continued to collaborate with their mentor in practice, they shifted their attention to assuming responsibilities as an independent teacher in writing their reflection journals.

Although all the participants wrote how they worked with others in reflection, only three *(10%)* participants consistently addressed interaction with others in each entry of their reflection journals throughout the assignment (see Table 4). What was common among these three student teachers was that they perceived themselves as an active member and partner in the learning community. They often used *We* instead of *I* to discuss how they worked with their mentor collaboratively as partners in lesson planning, teaching, and other areas to meet their students' specific needs. However, there were differences in the types of people the three student teachers worked with. While research has shown that collaboration with a mentor teacher is valuable (Izadinia, 2015; Jaspers et al., 2014; Orland-Barak & Hasin, 2010), collaboration with other groups is also important. Student Teacher C could have enriched their collaborative experiences by expanding their reflection with other groups besides their mentor. In comparison, Student Teacher A served as a good example as they worked with a variety of members in the learning community to maximize their professional development and to prepare for their future work as an educator.

Staff was the second most frequently noted group of members in the student teachers' reflection. More interaction with staff took place during weeks 3-7 of the assignment (see Table 3). Typically, a student teacher worked with others along with their mentor when attending school-wide staff meetings, grade level team meetings, or meetings of Individual Education Program (a collective effort to help a student with a team comprised of a classroom teacher, administrator, specialist,

and parents). One student teacher provided the following comment regarding a grade level team planning meeting:

> My mentor teacher and her colleagues are extremely collaborative and work together throughout the day to plan instruction, curriculum and student participation and behavior. Teachers not only share materials for instruction but also successful strategies and ways to improve… Overall I appreciate the positive, collaborative attitude that the teachers at this school bring to the table. They make it comfortable to ask for help and provide support for each other as well as students. I plan to use collaboration with the teaching staff and extend it to other support staff and administration, especially with classroom management and behavior problems…

The above practice of the grade level team planning was an example of practicing reflection in interaction with others. The student teacher responded positively to the teamwork exercised by the teachers. She enjoyed the experience and was prepared to apply and extend collaboration for future professional development. She specified areas for improvement in classroom management and student behavior based on the experiences up to the point.

Several student teachers were able to contribute to the professional development of the in-service teachers. In one reflection journal a student teacher noted that the grade level teachers were "very stressed out about" the newly adopted textbook because they were "having a difficult time implementing it" in their teaching. The student teacher had just completed teaching a unit of study to meet part of their student teaching requirements. So, she shared how she used the guide and website information to plan and teach the unit. The student teacher felt proud to support the in-service teachers by making use of what she had prepared or accomplished. The teachers "were very happy about the tip" they received, and they appreciated the contribution made by the student teacher.

Table 4. Summary of All Student Teachers Who Highlighted Others in Each of the Journals

Week	Student Teacher A	Student Teacher B	Student Teacher C
1	Mentor	Mentor	Mentor
2	Parent	Mentor	Mentor
3	Mentor & University Supervisor	Mentor	Mentor
4	Substitute	Mentor	Mentor
5	Mentor & University Supervisor	Individual Student	Mentor
6	Mentor & University Supervisor	Mentor & Parent	Mentor
7	Parent	Mentor	Mentor
8	Staff	University Supervisor	Mentor

The contributions made by the student teachers discussed in reflection were verified in the meetings held between a mentor and university supervisor or interaction between a principal and supervisor. Another way to validate the data in reflection was through reviewing the evaluations written by the mentor teachers. As some mentors commented, it was also a valuable learning experience for them to work with the student teachers who were more technologically advanced, equipped with new teaching strategies, or were able to use their strengths to contribute to the in-service teacher professional development and learning of their elementary students.

Other than the positive experiences for both student teachers and mentors, three of the student teachers examined the practice of teamwork critically. One of the student teachers stated that she did not enjoy the grade level team meeting because some teachers complained about students in a "nasty and unproductive" way, and they were ready to give up after trying out a behavioral contract with a student for only one week. The student teacher felt relieved that her mentor did not share

the negative attitude and decided to work with student teachers to model appropriate professional behavior. The mentor's behavior impacted the student teacher as she commented that she could see herself in the mentor's position "in about ten years and look forward to being a shining example."

Moreover, three student teachers experienced some tension or conflict in working with their mentors. These student teachers discussed the challenges through private meetings with their university supervisor, and one of them also reflected on his experience in journal writing. He had reservations when his mentor did not approve his proposal of trying out new classroom management strategies to meet the identified needs. To deal with the conflict, the student teacher compromised by following the mentor's advice but did not step away from making efforts to play an active role when appropriate. He understood that he needed to find a balance between taking initiative and following the mentor's advice to teach in her classroom. He admitted that he would have appreciated it much more if his ideas had been given some consideration at the beginning. As he gained more teaching experiences, he did have opportunities to take initiative and apply new strategies to improve instructional practice. Despite the occurrence, the student teacher concluded that he learned "a great deal" from the mentor and appreciated the opportunity to grow.

The participants noted limited collaboration with the other three groups: Parents, Individual Students, and Others in their reflection journals. The student teachers were required to plan lessons and a unit of study to meet the needs of individual students. The needs of the elementary students spanned from gifted and talented to those with challenges in English language development and behavior. In reflection, the student teachers were more sensitive to the students who were unable to meet behavior expectations or experienced challenges in content learning. However, no advanced or high achieving students were selected for spotlight in their reflection. Similarly, the participants' discussion of communication with the parents was generally related to the special needs of their child who struggled to meet expectations.

Finally, the participants wrote about their university supervisor and fellow student teachers, sharing a common tone of seeking advice or implementing suggestions. They asked for or received suggestions when they dealt with challenges or issues during student teaching. In comparison, their interaction with, and comments on, substitute teachers varied. Sometimes, they took over the class with a substitute teacher sitting in the classroom. Other times, they collaborated well with a substitute through an application of team teaching. One student teacher had quite different experiences with two substitute teachers: she learned what *not* to do to set up a positive learning environment because of what the first substitute teacher did, but thoroughly enjoyed working with the second substitute teacher through collaboration.

Implications

The interactions between the student teachers and the mentors as well as staff were generally perceived as positive. A positive mentor-mentee relationship can shape student teachers' confidence and professional identity (Izadinia, 2015). This study confirms similar results that were found in a study conducted in Finland where student teachers developed confidence from confirmation from their mentors (Hahl & Mukulec, 2018). Such experiences not only help the student teachers collaborate during student teaching but also prepare them for application of teamwork in the future. While student teachers are expected to learn from their mentors in different

aspects, it is a true win-win when they can make a difference in the professional development of in-service teachers.

Therefore, encouraging collaboration with more than just a mentor teacher and applying these collaborative experiences whenever possible throughout the student teacher process should be an area of focus in program design and reflection activities. The support of senior professionals, such as the mentor teachers, made a major difference in the growth of the student teachers in this study. On the other hand, student teachers should be guided to become an active participant and learn how to effectively communicate with their mentor, and others, when collaborating. Some student teachers contributed to the teaching profession when they were treated as equal partners and were encouraged to do so. As a result, student teachers were able to assist and contribute to the professional development of in-service teachers when opportunities arose (Liu, 2016). The mentors welcomed the contributions of their student teachers, which helped them improve teaching and apply life-long learning through hosting and collaborating with the student teachers. It should be a two-way street for a student teacher and mentor to collaborate, especially when student teachers have gained more experiences. Student teachers can be better prepared for collaboration in the future if they have opportunities to contribute to teamwork during student teaching, which can help them develop confidence and competence.

In this study, the student teachers were also guided to address issues and had time to carry out their *Next Step* to improve instruction by working directly with their pupils. It was a good opportunity for the student teachers to examine a phenomenon such as student off-task behavior at a deeper level (Lee, 2005; Rodgers, 2002). Before active participation in learning could take place, it was critical for the student teachers to figure out what caused the elementary students to lose focus or act out so that appropriate adjustments could be made and engaged learning could occur. This is a complex task for student teachers, and requires scientific inquiry (Dewey, 1933; Rodgers, 2002); it can be applied with trial and error, and in collaboration with others to improve practice and stamina.

Limitations

The reflection journal template used in this study was purposefully organized for the participants to go beyond listings and descriptions. By completing the *Next Step* in each entry, the student teachers made plans with proposed actions to address any discussed issues. Analysis of the participants' reflectivity or reflection at a deeper level was infused in the discussion of the two research questions. However, data collection of how the student teachers carried out their proposed plans was beyond the scope of this study. The availability of such data would make it possible to closely and consistently monitor how student teachers take action to resolve any specific issues step by step for improvement.

Moreover, in examining the teacher candidates' reflection centered on the six professional standards, all student teachers placed in the K-5 classrooms were studied as one group. It is unknown whether grade level differences affected the selection of the professional standards that were the focus in these reflections. Therefore, future research could build upon the findings of this study by analyzing if differences in reflection by standards exist between grade levels.

Conclusions

Student teaching is a critical stage for pre-service teachers to gain independence through working with a mentor teacher and others in an authentic classroom and school context. To provide the best support to school children, student teachers must think critically about their practice as an individual and in interaction with others in a learning community, make decisions accordingly, and develop abilities to resolve issues. In the context, written reflection can be used as a meaningful vehicle in the learning process as well as a professional goal for student teachers to develop and demonstrate their growth. When reflection is purposefully aligned to the evaluation criteria of student teaching or professional standards, student teachers can remain focused and find connections between their learning and professional expectations.

Mentor teachers are uniquely positioned to help student teachers achieve success and transform into independent and reflective teachers. Their impact is critical not only because they share their classroom with a student teacher throughout a school day during an assignment, but also because they develop a professional relationship with their mentee. When student teachers are encouraged to take initiative and make sufficient use of their talents and strengths, they can be better prepared as student teachers and future teachers in professional dispositions, instruction, collaboration, and more. A mentor's modeling of open-mindedness, enthusiasm, problem-solving, readiness to implement improvements, teamwork, and leadership can have a significant impact on student teachers' development of confidence and professional identity. Student teachers are not to mimic their mentor, but rather find their own teaching style to function well as a new and independent teacher in the future, which is the essence of reflection. The ability to identify issues, make adaptations, and find productive resolutions is critical for student teachers to meet the needs of their future students. When possible, student teachers should be encouraged to contribute to in-service teacher professional development, within their power, through the application of equal partnership. Such experiences would help student teachers gain confidence and become better prepared for their future profession as educators.

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Acknowledgments