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Feature Article

#learningtoreflect: Preservice Teachers' Reflections on Instagram

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Abstract

Although research on teacher reflection is vast, research on preservice teachers' (PSTs) use of social media and multimodal reflections is minimal. This study provides greater understanding into how PSTs used Instagram as a platform for engaging in reflection. Throughout an academic year, a group of fourteen PSTs used Instagram several times each week to reflect on their field experience rather than writing a reflective paper. I propose that the participants in this study were photoreflecting, which is the process of deep consideration as one transmediates images and print language. The participants in this study photoreflected by (a) photojournaling, (b) noticing, (c) noticing and extending, (d) noticing and problem solving, and (e) noticing and changing. Participants photojournaled the most and noticed and changed the least

Although teacher reflection is widely accepted as integral to the field of teacher education, recently the concept has been critiqued and questioned (Beauchamp, 2015). Some critiques are theoretical in nature while some relate to the practical implementations of the concept (Collin et al., 2013). In a review of literature, Beauchamp (2015) outlined multiple critiques of reflection including (a) the lack of real reflection, (b) the narrowness of approaches to reflection, and (c) the structural limitations on reflection. Some have argued that "reflective teaching" has become much more of a slogan than actual practice (Noffke & Brennan, 2005) and may merely be a fictional piece in professional literature (Marcos et al., 2011). Additionally, the reflective work that is taking place lacks a holistic approach that includes an emotional element (Akbari, 2007). Last, the hierarchical structure in which reflection is typically encouraged, has also been questioned, especially when less experienced students reflect under the direction of a skilled instructor (Enfield & Stasz, 2011). The purpose of this research was to better understand if using a different medium of reflection might address these critiques.

Teacher education programs have placed an emphasis on encouraging reflective practice (Calderhead, 1989; LaBoskey 1994; McCaleb et al., 1992) and many different methods to this end have been considered. Some recent practical strategies to influence reflection include collaborative reflection (Clarà et al., 2019), processfolios (Silveira et al., 2017), video analysis (Hollingsworth & Clarke, 2017), microblogging (Krutka et al., 2014), conversation analysis with action research (Hale et al., 2018), reflective interviews (Wetzel et al., 2018), and video reflections, (Gröschner et al., 2018). Other very common reflective methods include journal writing (LaBoskey, 1994), portfolios (Wade & Yarbrough, 1996), narrative writing (Van Halen-Faber, 1997), interpersonal seminars

(Zeichner & Liston, 1987) and in-depth observations (Andrew & Teitelbaum, 1983).

The practical strategies listed above, though beneficial in many regards, do lack several key components and may be connected to the critiques identified earlier. First, the reflective strategies described above may lack an emotional element (Akbari, 2007). Second, the strategies also seem to be disconnected from teachers' lived experience (Dewey, 1938). Some have suggested that pre-service teachers (PSTs) dread sitting down to write (Bolin, 1990; Yinger & Clark, 1981), and I wonder if some strategies may be "forced reflection" (Beauchamp, 2015, p. 127). Third, the reflective assignments most often used in teacher education programs have a narrow focus and do not seem to holistically consider the individual. Additionally, an apparent absence of visual literacies and multimodal literacies (Walsh, 2015) is seen by the heavy use of alphabetic text, prose, and aural communication to represent deep thoughts. Visual data "evokes deeper elements of human consciousness that do words" (Harper, 2010, p. 13), yet through my research, mainly prose has been used to elicit PST reflection. Third the structure of reflective assignments does seem hierarchal and may include too few reflective moments (McCaleb et al., 1992). For instance, engaging in a seminar or interview several times throughout a semester may not be frequent enough for ongoing reflection.

As a teacher educator, I believe that engaging my PSTs in ongoing reflection is worthwhile. Before engaging in this study, however, I did not feel that common practices were an effective medium for deep thought. Not only did my PSTs dread their current journal writing, they hurriedly completed the weekly task without thinking much about what they were writing and confessed it was "forced reflection" (Beauchamp, 2015). I set out to find a better way. I sought a practice that would allow individuals to engage in real reflection that was connected to their life, that more holistically considered the emotional aspect of individuals, and operated in a nonhierarchical community.

With the understanding that seven-in-ten Americans use social networking sites (SNS) regularly and 71 percent of Americans ages 18-24 use Instagram (Smith & Anderson, 2018), I considered the use of a SNS as a platform for reflection. Instagram, a photo sharing mobile device app, seemed to have the potential to elicit real reflection and widen the reflective process to include emotion. Additionally, Instagram is heavily focused on sharing visual data, a mode that seemed to be lacking in typical reflective work.

In this article, I discuss the project and findings from a yearlong study wherein I engaged PSTs in Instagram throughout their field study. The purpose of this qualitative study was to better understand the reflective journey of 14 PSTs in the midst of a yearlong education internship. More specifically, I sought to better understand how using Instagram might influence reflective practice. I sought to answer the question, in what ways do PSTs reflect using photos on Instagram? I begin this article by reviewing literature in regards to teacher reflection, Instagram and multimodal literacies. Next, I describe the details of the project. Next, I discuss the qualitative results that describe how PSTs reflected on Instagram. Additionally, I introduce the term that emerged from this work, photoreflecting. I conclude by arguing that the practical implementation of reflection should be considered in teacher education programs.

Review of Literature

Reflection

Teacher reflection can be considered the "hallmark of professional competence" (Larrivee, 2008, p. 341) and some have argued that without reflection, teachers would remain stagnant (Fuller & Brown, 1975). Although it is clear that the term reflection is a popular term used by educators, what one actually means when using the term is less clear (Beauchamp, 2015). In this section, I review some scholars have defined reflection and how I define reflection in this study.

Reflection as thought

Many consider Dewey (1910; 1938) to be the pioneer of reflection in education. With his landmark publication, How We Think, Dewey argued that one reflects in order to understand their surroundings. The process of reflection, according to Dewey (1938) is a meaning making process that includes reorganizing and reconstructing experiences. Dewey (1938) also explains that while reflecting, individuals make a distinction between the actual experience and the experiencing, or the how one experiences. Similarly, Zeichner and Liston (1987) defined reflective action as "the active, persistent, and careful consideration of any belief or supposed form of knowledge . . ." (p. 24). Dewey (1910) and Zeichner and Liston (1987) specifically describe reflection as a thought process and careful consideration. Other scholars have extended and added to these definitions.

Reflection as thought and action

Osterman (1990) maintained that reflection is problem oriented in that individuals are prompted by a problem then engage in a "dialectic process of thought and action" (p. 134) then seek to improve or develop one's craftsmanship. Similarly, Hatton and Smith (1995) also connect reflection to becoming more effective in one's practice. Reflection is "deliberate thinking about action with a view to its improvement" (p. 40). Though Dewey (1910; 1938) and Zeichner and Liston (1987) focused on reflection as understanding the world through thought, Hatton and Smith (1995) and Osterman (1990) posited that reflection entails improvement and action.

Schön (1983) is well recognized for his foundational work on reflection and action as he clarified the definition of practitioners. Practitioners are constantly solving problems while engaged in their craft and become " . . . a researcher in . . . practice . . ." (p. 68). Schön identified that practitioners reflect and research while they are engaged and after they have engaged in their craft, coining the terms reflection-in-action and reflection-on-action.

Schön (1987) argued that professionals harmoniously combine reflection and action to solve problems by problem setting, enduring a state of puzzlement, reflecting, and experimenting. This cyclical process, posed by Schön, involves reflection and action. However, in order for one to engage in problem setting, the individual must "buil[d] up a repertoire of examples, images, understandings, and actions" (p. 138). This repertoire of images greatly influences reflection and stands at the foundation of problem setting. For an individual cannot reflect about a problem that he has not noticed.

Reflection as critical

Critical reflection, which "may be described as the type of thinking that serves to challenge notions of prior learning" (p. 51) occurs when one questions personal beliefs, goals, or expectations. Some posit that a major component of reflection should be critical, so that teachers are developing cultural critical consciousness (Gay & Kirkland, 2010), are reflecting on culturally relevant pedagogy (Ladson-Billings, 1994), and recognize that teaching is not a neutral act (Howard, 2003).

Smyth (1989) argued that reflection should be critical and identified four steps in which to engage teachers including, (a) describe, (b) inform, (c) confront and (d) reconstruct. Francis (1995) also posited that an additional step should be added to the work of Smyth (1989)—challenging beliefs and changing action, arguing that actual change of beliefs is part of the critical reflection process.

Although the term reflection is clearly common in education, the way in which we define the term is less clear. In the preceding section, I identified that reflection can be defined as deep consideration, as change and action, whether it is in action or on action and reflection can also be a vehicle to think critically and change beliefs. Throughout this study, reflection was understood as consideration, active, and critical.

Instagram

Dewey (1938) discussed the importance of connecting life experience to educational experience. He argued that education should be as closely related to the "actual life-experience of some individual" (p. 89). With current technological advances, it is true that actual life experience of many students now involves avid use of social network sites (SNS) (Lup et al., 2015). SNS include Facebook, Twitter, Pinterest, and Instagram, which are virtual collections of personal profiles that can be shared with others (Hughes et al., 2012).

In June 2018, Instagram, a mobile-based photo and video sharing SNS, reached 1 billion users, quickly surpassing the growth rates of other popular SNS including Facebook and Snapchat, a drastic increase from the conception of Instagram that launched on October 6, 2010. In eight years, Instagram grew to a worldwide app with 1 billion monthly users, 500 million daily users, with 50 billion photos shared total (Constine, 2018).

 Instagram users between the ages of 18- 34 account for 65% of the 1 billion Instagram users (Statistica, 2019). It is very likely that typical college aged teacher candidates use Instagram regularly and it is very much a part of their actual life experience (Dewey, 1938). Besides being directly connected to most young people's actual life, SNS have affordances. SNS can encourage learning outside of the classroom, give students purpose in creating content, and allow student collaboration (Krutka & Carpenter, 2016). In addition, SNS offer multimodal texts as it includes images, aural, and print (Walsh, 2010).

Multimodal Literacies

In a technologically advanced world wherein individuals are constantly constructing, designing, and reading messages with print, aural, and visual information, it is clear why new literacies (Leu et al., 2004) and multiliteracies, (New London Group, 1996) have become an important component of educational research. Additionally, the term multimodal, which means multiple modes of communication, including, reading, writing, talking,

listening, and viewing, has become a common term (Walsh, 2010). Though print writing has been a common mode of communication for the past several centuries the advancement of technology has added additional layers to the way in which we communicate (Kress, 1998). In addition to print, we communicate with visuals (Bailey & Van Harken, 2014), photos and selfies (Bakhshi et al., 2014), emojis (Doiron, 2018), hashtags (Veletsianos & Kimmons, 2016), and videos (Hu et al., 2014). This is not to say that before technology, print was the only form of communication. Visuals, for example, have been connected with print for many years; however, the ease with which we can create multimodal text with technology has made multimodal texts even more prevalent (Kress, 1998).

The specific use and benefits of visual images has been considered and researched by many scholars (Lemon, 2007; Kress, 1998; New London Group, 1996; Siegel, 1995). Siegel (1995) stated,

> Immersed in a world of words of our own making, we have come to regard our reliance on language as natural and, in doing so, fail to recognize that they are multiple ways of knowing—music, dance, visual arts, and so on—each of which offers a distinctive way of making meaning. (p. 456)

Although there are many ways of knowing and constructing meaning, most classrooms remain "deeply rooted in a verbocentric ideology" (p. 473). However, after studying children's drawings, Siegel posited that when one uses signs to express meaning and knowledge, one understands concepts on a deeper level. Transmediation, she argues, is the reason for this deeper understanding. Transmediation is the process of "translating meanings from one sign system to another" (p. 455), which encourages more "opportunities to engage in generative and reflective thinking because learners must invent a connection between the two sign systems, as the connection does not exist a priori" (p. 455). Through transmediation, individuals generate new ideas and engage in reflective thinking because

they are inventing and creating meaning. In discussing the findings of Siegel (1995), Bailey and Van Harken (2014), explained that transmediation affords individuals "an expanded way to comprehend and learn" (p. 242).   Similarly, Kress (1998) specifically discussed the connection of images and verbal language arguing that visuals extend meaning of language and when engaging with multiple modes, one is required to think more deeply in the process. When individuals are afforded the opportunity to engage in transmediation of multimodal texts, individuals may think more deeply about the topic at hand.

Methodology

The purpose of this qualitative study was to better understand the reflective journey of fourteen pre-service teachers engaged in a yearlong elementary internship. This research focused on better understanding human experience through non-numerical, language data (Denzin & Lincoln, 1998). More specifically, a qualitative researcher focuses on understanding what participants identify as important and worthwhile through the participants' words, experiences, and stories. This particular study focused on participants' words and stories through the use of photographs and sought to understand lived experience over time (Willman, 2008).

Photovoice is a qualitative methodology that allows participants to tell their story from their own perspective through the use of photographs. It is a participant action research methodology based on the concept that individuals are the true experts on their own life (Wang, 2006). This study is heavily influenced by photovoice methodology but does not perfectly align with the stated goals (Wang & Burris, 1997) or photovoice steps that have been identified (Wang, 2006). The purpose of photos in this study is to understand the participants' stories and reflections but does not focus on reaching policymakers or stakeholders. As participant researcher, the participants and I constructed reality together as the investigation unfolded (Guba & Lincoln, 1994).

Participants and Setting

The participants in this study was a cohort of fourteen PSTs attending a large university in the southeastern part of the United States working toward a master's degree and a credential as part of a nationally ranked five-year degree program. The participants completed a yearlong internship, working in an elementary classroom under the direction of a mentor teacher four days a week and attended university classes one day per week. As I sought to construct reality together with the participants, I worked closely with the participants throughout the week as a coach in the field and met with them in classes on Fridays at the university. However, I was not their instructor or professor. The mean age of the participants was 21. There were 13 females and one male. The participants were split between three local elementary schools.

Procedures

While working with PSTs, I began wondering when teacher candidates had the opportunity to reflect and in what ways they reflected. After interviewing the participants about their current reflective practice, I held a training seminar for the participants where I introduced Instagram and discussed privacy and ethics. After receiving IRB approval, approval from the elementary schools, I asked the participants to discontinue the use of their web-based journal (previously used in their program) and use Instagram to document their experiences. The PSTs created private accounts and followed each member of the cohort. I asked the PST to regularly post photos (3-5 per week) from August - May. Every Friday, the cohort would come to class and discuss the photos from the week. Throughout the school year, the following data sources were collected.

Data Sources

This qualitative study is ethnographic in nature, and included observations, interviews, and documents. As a participant observer, I collected field notes and wrote analytic memos during or after all observations throughout the year.

Participants were observed weekly in the field at their particular school site. This included observation of the participant's teaching as well as conversation in lesson debriefing. I also engaged in participant observation weekly on Fridays throughout the school year in the university setting. This resulted in over 50 pages of field notes. In addition to multiple observations collected each week, I conducted two rounds of individual interviews during the course of the year, in November and April. Semi structured interviews included the use of photo elicitation techniques (Samuels, 2004) where I used participant photos and asked individuals to expound upon the pictures. This resulted in 60 hours of recorded interviews. I also collected many documents on Instagram throughout the year. Documents included photos, captions about the photos and comments from peers. On average, each participant uploaded three photos per school week from August through May. This resulted in over 1,800 photos and captions.

Data Analysis

As a participant researcher, I engaged in informal analysis throughout the data collection process as I decided what to include, what to pay close attention to and what to ignore (Hatch, 2002). All data sources (observations, interview transcripts, documents) were uploaded to a qualitative software package for formal analysis. I engaged in formal analysis of all data toward the completion of the project in May. All informal and formal analysis is inextricably related and influenced from the lens in which I view this work.

During formal analysis, I commenced with specific, particular observations and moved to general, explanatory statements.   I placed codes into the data and interpreted the data through my own understanding of what was occurring, while constantly checking with participants to ensure correct representation. I did this in three phases (a) coding (b) analytic memos and (c) categories. I started by viewing all data sources and assigning in vivo codes (Saldaña, 2009) to the data. In vivo codes highlight the actual words of the

participants. For examples, if a participant said, "This is a photo of a stack of worksheets that I saw my teacher copy for the week. I feel frustrated with the amount of worksheets I have seen." I assigned an in vivo code of "frustrated with worksheets". After assigning in vivo codes, I continued in inductive analysis by continuing to move to more general statements. I took in vivo codes and noted descriptive codes as I sought to condense the participants' words into shorter words and phrases. During all coding, I kept a word processing document of analytic memos open to explore my thoughts and wonderings. This included disjointed sentences, bullet points, and questions that I considered. Through coding and analytic memos, I moved from codes to broader categories. Throughout all coding and memo writing, I constantly considered my positionality, my influence on the participants, and my assumptions, and how each affected the participants, data, and research findings. During Friday conversations and interviews, I engaged participants in member checking to continually ensure accurate interpretations (Guba & Lincoln, 1994).

Results

In this study, I sought to answer the question, in what ways do PSTs reflect using photos on Instagram?

How Teachers Reflected

Through careful analysis, I created several larger categories that described how the PSTs in this study reflected. The PSTs engaged in (a) photojournaling, (b) noticing, (c) noticing and extending, (d) noticing and problem solving, and (e) noticing and changing.

Photojournaling. Throughout the year, participants often reported what they had done that day or documented an event. This category, photojournaling, included all photos, comments, and captions where individuals explicated events from the day or an event. These often started with the words "Today I…" and included pictures from events. For instance, Barbie (all names are

pseudonyms) posted a photo (see Figure 1) and stated, "Today we had the students read their spooky stories to the class . . . We also turned off the lights and had spooky music playing in the background as student read them! #halloween". Barbie took a photo of an experience in her day and felt that it was noteworthy to share on Instagram. The purpose of this post was to document an event and to share an idea with peers. Subsequently, at the university setting a few days later, peers talked about the practical idea and discussed similar ideas to encourage the sharing of student writing.

Similarly, Charlotte posted about an unsettling experience with a child in her class by taking a picture of a necklace (see Figure 1) that had been worn by a student and detailing the story in her photo caption. A child had, in the middle of class, taken the necklace and began repeatedly twisting the necklace until he was choking himself. This event was memorable to Charlotte as she had experienced something uncomfortable for the first time. In a like manner, Pat posted a photo of glasses and described a child who had a fit, threw his glasses and stepped on them and Josie experienced mixed emotions when her mentor teacher was absent (see Figure 1). Each of the posts and conversations that were considered photojournaling, included a description of an event but did not include analysis, questions, or other considerations.

Noticing. In addition to recording events, participants also noticed things about their experiences and surroundings. These posts and conversations were different from photojournaling because they did not explain an event, rather they were moments when the PSTs saw something, and thought, "hmmm". The PSTs were trying to make sense of the new world in which they were a part (that of teaching).

Kimberly noticed something interesting when working with a young girl in her class who speaks German. While observing the girl encode a sentence on a whiteboard (see Figure 2), Kimberly

Figure 1
Photoreflecting
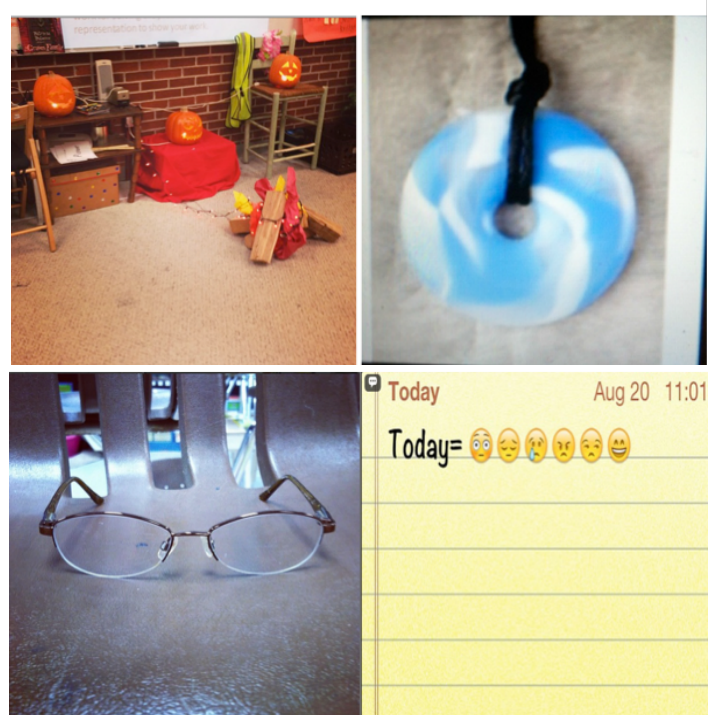
noticed that the girl's accent influenced the way she invented spelling. Kimberly photographed the child's writing and captioned that it was very interesting that the girl's accent influenced her spelling. Kimberly saw something that influenced her to stop, get her phone, take a picture, and consider but she did not extend her thoughts.

Likewise, Erin noticed some tension in a spelling program that was required in her school. She noted, "Planning a spelling lesson, #lessonsdontflow mentor doesn't like the flow either, but this is what he was given and was told to use." She posted a picture of the spelling textbook (see Figure 2). In this instance, Erin noticed a dilemma in teaching—when teachers are asked to implement a program that does not coincide with their desires. Erin did not extend this thought to what, specifically, she wasn't pleased with, or how it could be improved; she simply made an observation and recorded this observation. This noticing was different from a photojournaling post wherein the procedural information from an event was explicated. Likewise, Pat noticed a standardized test question (see Figure 2) that asked the child to choose a

picture that most closely aligned with a good citizen. He stated, "Basically, our students must be able to share the same opinion as the test makers. Just interesting." Pat noticed that the question was bias but did not extend this noticing with an opinion or question. Additionally, Moxie posted a photo from the first day of school of two chairs that were away from the other chairs and noticed that two children were already being treated differently while Leslie noticed that a child at her school was picked up from school by a tractor (see Figure 2).

Figure 2

Noticing

Noticing and extending. There were times that PSTs noticed something and extended their noticing through commenting or wondering. In each of these instances, the PSTs did not stop at their noticing. For example, Camille noticed something disheartening when she visited a nearby elementary school. She noticed that the students in fifth grade were doing a lot of seatwork and were completing multiple worksheets. She took out her phone one morning and photographed the stack of worksheets that the students would be completing throughout the next week. In this moment, Camille did not just simply notice that large stack of papers (see Figure 3), she noticed it,

photographed it, and extended with an opinion. Camille commented,

"I'm really struggling with giving so many worksheet that really aren't helpful in learning. I know that sometimes worksheets are great! It shows what kids know or what they struggle on. But school can't just be worksheets." Camille noticed something uncomfortable and extended this noticing with an opinion.

PSTs also extended their noticing by creating wonderings. Josie posted a photo of student work comparing a student's writing growth over a period of time, wondering about what influenced the student's writing growth (see Figure 3). Ella noticed a child copying down words and repetitively writing the word and wondered if it was appropriate for the child. Leslie posted a picture of a post it and wondered how to instill confidence in a child when a student's mother had called her stupid and Camille posted a picture of a child's necklace that said "MOM" and wondered about the child's academics while her mother was terminally ill (see Figure 3). PSTs extended their noticings by commenting and questioning.

Figure 3
Noticing and Extending
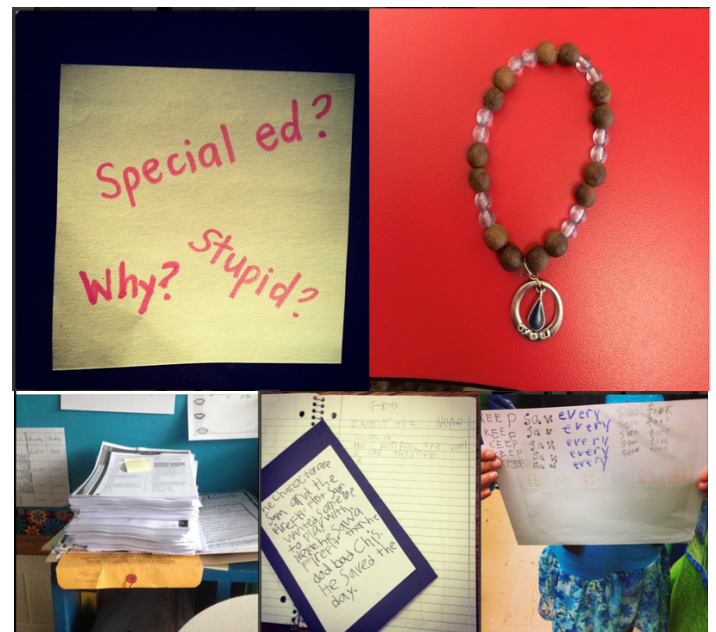
Noticing and problem solving. Many times throughout the year, PSTs noticed a specific problem and created a possible solution for the dilemma. Some problems were specific to classroom management issues, some involved student learning, and others included teaching ideas. Charlotte recorded a possible solution for student learning when she noticed something about a particular emergent bilingual student who was confident in math but was less confident in literacy. She posted a picture of the student's math work and stated, "I am thinking that we need to focus on literacy during math through word problems with more complex math. This will still challenge him in math but focus on his need in literacy." Charlotte identified a possible solution to something that she noticed.

At times, the PSTs reflected while they were in the process of solving a problem. Holly noted that she did not feel comfortable asking her fifth grade students to sit down in their desks and popcorn read a textbook, as she had seen her mentor teacher do, but she was commissioned to teach the textbook. She took a picture of the textbook with a blank piece of paper next to it (see Figure 4) noting that she did not know how to solve this problem but was beginning the process. Similarly, Khloe noticed children wanted to speak out a lot and wondered if popsicle sticks could be used to call on children. And Rebekah posted a photo of a verb poster from a lesson that did not go well and began considering how to solve the problem (see Figure 4). Notice that in each of these instances, the PST did not reflect upon actual change. Rather, they were reflecting about problems and possible solutions.

Noticing and changing. Lastly, the participants in this study reflected about actual change in their practice. The PSTs noticed something; problem solved and changed their practice. Moxie, while teaching in a kindergarten class, noticed that one student was unable to sit in his seat during independent work time (see Figure 5). She stated, "So yesterday I tried sitting him in this rocking chair at his own private table, and the difference
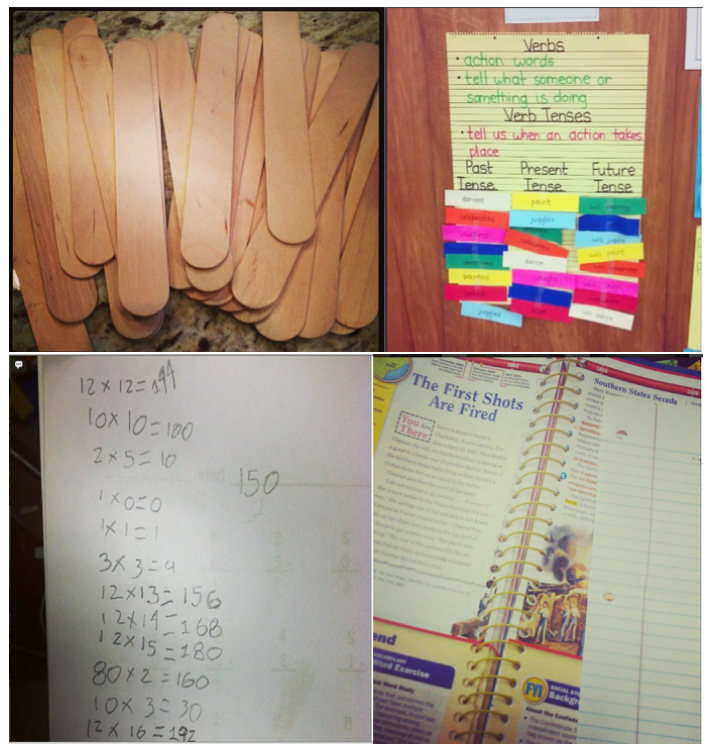
Figure 4
Noticing and problem solving

Figure 5
Noticing and changing

was almost insane! He sat quietly, finished the assignment without getting up, and seemed focused on his work". Moxie noted a puzzling situation and changed her practice. Additionally, Erin noticed that the textbook she was expected to teach lacked authenticity and was disconnected from her students. So rather than continuing, she taught the content with the children's favorite lunches and their birthdays (see Figure 5). Likewise, Rebekah changed her practice to include student interest (chapstick) and Camille changed her science practice to include literacy (see Figure 5).

Throughout the year, the PSTs engaged in multiple ways of reflecting. Although all participants reflected in each of the five ways throughout the study, some reflective techniques were used more frequently than others. I separated the Instagram posts to find out the frequency in which the PSTs used each coded reflection. For example, photojournaling was coded the most with 583 codes, and noticing and changing was coded the least with 152 (see Table 1).

Table 1
Frequency of Teachers' Reflections

Reflective Technique	Frequency	Percentage
Photojournaling	583	22%
Noticing	471	18%
Noticing and Extending	608	23%
Noticing and Commenting	449	17%
Noticing and Questioning	159	6%
Noticing and Problem Solving	186	7%
Noticing and Changing	152	5%

Discussion

Although research on teacher reflection is vast, research on PSTs use of SNS and multimodal reflections is minimal. This study provided greater understanding into how PSTs used Instagram as a platform for engaging in reflection and why PSTs felt it was an appropriate mode. I propose that the participants in this study were photoreflecting, which is the process of deep consideration as one transmediates images and print language. Photoreflecting includes (a) photojournaling, (b) noticing, (c) noticed and extending, (d) noticing and problem solving, and (e) noticing and changing.

In section two of this article, I introduced how scholars have conceptualized reflection including, reflection as thought (Dewey 1910; 1938), reflection as thought and action (Schön, 1983), and reflection as critical (Smyth, 1989). The participants in this study engaged in reflection similarly. The participants showed that they were engaging in thought as they noticed new information such as their environment or teaching strategies. The participants also showed that reflection was also connected to action as they noticed and changed their practice. Additionally, the PSTs also began to engage in critical reflection as they noticed and extended through questioning. It seems that the way in which PSTs in this study reflected was similar to how refection has been theorized.

Although the actual content of PST reflection was not qualitatively different than reflection literature, the way they represented their thoughts was unique. The participants in this study engaged in photoreflection through different mediums including, visual, aural, and print representation (Walsh, 2010). They used visuals to represent reflective thought, wrote reflective text, and then communicated about the images and text through interpersonal interactions. In this way, participants were reflecting multimodally. In fact, the participants even explained that at times they felt they didn't need words at all; the image alone was a form of reflection for them. This realization is a promising first step in envisioning classrooms where "verbocentric ideologies" (Siegel, 1995, p.

473) are put to the side and alternate views of communication are celebrated.

The participants actively translated meanings from images, texts, and speech, a process known as transmediation (Siegel, 1995). Although the participants did not use the words multimodal or transmediation in their conversations and interviews, they constantly highlighted the strength of incorporating visuals, text, and conversation and how it added to their reflective thought. They also discussed how images took on new meanings over time and how when viewing their peers' images, a participant would engage in different reflective thought than the peer who posted the image. In other words, as participants "invent[ed] a connection between the two sign systems" (Siegel, 1995, p. 455), different individuals invented new connections.

Conclusion

What is the purpose of engaging PSTs in reflection? If the purpose is to encourage individuals to craft a well-written essay that they care very little about, will never go back and read, and won't discuss with their colleagues—then writing essays and reflective journal, entries could be a good option. If our purpose in encouraging reflective practice is to encourage teachers to build up a "repertoire of examples, images, understandings, and actions" (Schön, 1987, p. 138), ask why questions (Smyth, 1989), and connect thoughts to action (Zeichner & Liston, 1987), then we should consider if our practical implications match these goals. Although, simply changing the way in which we encourage reflective practice is not enough in the quest to creating teacher education programs that prepare teachers to enter the field and enact social justice practices (Mcdonald & Zeichner, 2009). However, seeking reflective practices that (a) engage PSTs in real reflection, (b) holistically involve the individual, and (c) discourage hierarchical reflective patterns is worthwhile (Beauchamp, 2015).

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