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Seeing What They See – A Photovoice Analysis of Exploratory Early Field Experiences

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Abstract

The purpose of this photovoice study was to investigate what and how pre-service teachers conceive and make meaning of exploration observations of early field experiences (EFEs). EFEs are vital components of the teacher preparation program and include all activities that occur in pre-service teacher education prior to student teaching, including exploratory observations (Retallick & Miller, 2010). Process coding of 123 photographs and reflective captions led to five themes: (a) optimizing student aperture, (b) affirming the decision to teach, (c) identifying learning strategy outcomes, (d) balancing the three components of agricultural education, and (e) creating a felt need to learn. Praxis included more purposeful inclusion of cooperating teachers as experts, distinguishing between an experience and observation, and seeking those observations outside of agricultural education classrooms.

Keywords: Images, pre-service teachers, early field-based experiences, observations

Introduction and Review of Literature

Questions about the impact teacher education programs have on preparing aspiring teachers effectively for employment has been called into question (Darling-Hammond, Chung, & Frelow, 2002). One way teacher educators prepare students for teaching roles is through early field based experiences (EFEs). EFEs are vital components of teacher preparation programs and include all activities that occur in pre-service teacher education prior to the student teaching internship (Guyton & Byrd, 2000; Hulling, 1998; Retallick & Miller, 2007a; Smalley & Retallick, 2012). EFEs help pre-service teachers develop their perceptions of teaching by considering "how situations within classrooms are experienced; how these situations are interpreted given the teacher's previous experiences, beliefs, and assumptions; and how these interpretations are manifested in behavior" (Goodman, 1988, p. 121).

The purposes of EFEs are multifaceted. They exist to help future educators by decreasing their anxiety toward entering the teaching profession, increasing their desire to select a career in teaching, developing their self-efficacy to teach effectively, familiarizing them to the nuances of

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teaching, and exposing them to how students learn (Scherer, 1979). Perhaps the greatest attribute of EFEs, however, is that they provide pre-service teachers the opportunity to explore a career in teaching as they observe the activities of a practicing teacher (Retallick & Miller, 2007b; Smalley & Retallick, 2012). Thus, EFEs are excellent avenues for assisting students in forming their teaching philosophies (Goodman, 1988).

McIntyre (1983) noted that EFEs are "probably the most praised, most criticized, most entrenched, most debated but certainly least understood part of pre-service teacher education" (p. 1). Although recognized as a vital component to teacher education (Guyton & Byrd, 2000), a paucity of research exists on how pre-service teachers conceive the experiences and make meaning of the teaching profession as a result of participating in multiple EFEs (Goodman, 1983). For conceptualization to occur for pre-service teachers, personal schemata must be developed within each individual (Korthagen & Kessels, 1999; Santrock, 2004).

Teacher development is conceptualized as an ongoing process of experiencing practical teaching and learning situations, reflecting on them under the guidance of an expert, and developing one's own insights into teaching through the interaction between personal reflection and theoretical notions offered by an expert. (Korthagen & Kessels, 1999, p. 5)

As people's schemata begin to take shape, mental models are formed (Wideen, Mayer-Smith, & Moon, 1998). Developing mental models allows individuals to process their learning and begin to visualize themselves in the role of a teacher (Martin, 2008). Minogue (2010) stated that effort should be devoted to analyzing the mental models that pre-service teachers bring to the teacher education program and how those images shape their personal and professional identity. Creating mental images helps pre-service teachers consider how their perceived feelings, experiences, ideals, and perceptions of effective teaching align with what they *see* and attend to in real classroom settings (Korthagen & Kessels, 1999).

Great variability exists from one institution to the next regarding the expectation of EFEs as well as how they are conducted and assessed (Guyton & Byrd, 2000). At a minimum, for EFEs to be effective, they should contain a clear purpose and set of activities that are documented through various forums devoted to establishing their purpose (Smalley & Retallick, 2010).

Unfortunately, too often, EFEs have been resigned to students performing menial tasks, such as grading papers and managing students in classrooms, which does not allow aspiring teachers to focus on how to teach and connect it to how students learn (Moore, 2003; Retallick & Miller, 2007b). In their model for early career field experiences in teacher education, Retallick and Miller (2010) suggested that pre-service teachers should be afforded opportunities to explore their careers through activities such as carefully guided observations. However, what do pre-service teachers perceive and learn during various EFE experiences? How do their perceptions *fit* into their existing mental models? A need exists to study the "insights, messages, inferences, [and] reinforced beliefs about being a teacher, about pupils, classrooms, and the activities of teaching" (Feiman-Nemser & Buchman, 1983, p. 2) from the lens of pre-service teachers.

Purpose of the Study and Research Objectives

The goal of the course EFE experience was to expose pre-service agricultural educators to various situations in which their knowledge and decision-making mechanisms (i.e., mental models) might be enriched and challenged (Moore, 2003). The purpose of this study was to investigate what and how pre-service teachers conceive and make meaning of exploration observations of EFEs.

Methods

Schmidt (2010) stated that "Contextualized studies of factors that individually or in combination contribute to the educative value of particular teaching experiences provide a large area for continued research. Qualitative studies are particularly well suited to uncovering such uniquely contextualized relationships" (p. 143). Photovoice is a method that uses "photos as a tool to collect data" (Borron, 2013, p. 7). It is a research strategy allows people to tell their stories through photographic images (Wang, 1999; Wang, Yi, Tao, & Carovano, 1998). The use of photographs can "invoke comments, memory and discussion" (Banks, 2007, p. 65). "It entrusts cameras into the hands of people to enable them to act as recorders, and potential catalysts for change, in their own communities" (Wang & Burris, 1997, p. 369). Photovoice can empower people to view the world differently and begin to think about making necessary changes to their environments (Strack, Magill, & McDonagh, 2004). Goodhart et al. (2006) stated,

Photovoice is a unique way to engage undergraduate students because the process fits into their busy lives. Taking pictures as part of a class experience is a spontaneous and accurate way to capture a moment, compared with writing a paper or having group discussions with no evidence present to back up people's opinions. (pp. 55-56)

Originally, photovoice was developed as a means to help the marginalized and oppressed, as photos told important stories about peoples' situations and served as images that helped shape policy (Wang, 1999). Photovoice has been used in various settings regarding social change. It "facilitates the sampling of different social and behavioral settings. People with cameras can record settings–as well as moments and ideas" (Wang & Burris, 1997, p. 372). Essentially, participants are charged with taking pictures and telling stories that can be shared with others to enact positive societal changes regarding the photographer's viewpoint of a specific environment (Wang & Burris, 1997).

The use of photovoice builds "on the value of the visual to capture and use visual data in the development of knowledge" (Hansen-Ketchum & Myrick, 2008, p. 207). Individuals are active members of the research process generating data through photos and reflections. The design of photovoice research empowers participants to take photographs of things that are meaningful to them and contribute to knowledge development (Wang & Burris, 1997).

Photos offer a physical and intimate way of understanding the experiences of the participants (Wang, 1999). The information provided in a photo "captures association of participants' experiences to social networks, culture and history and . . . [evokes] greater cognitive response than words alone" (Hansen-Ketchum & Myrick, 2008, p. 207). Since these photographs are used to develop understanding of individuals and groups, including their beliefs and experiences (Heisley & Levy, 1991), photovoice reveals information about the photographer and not just the image that was captured (Riley & Manias, 2003). When participants select their own photographs based on their preference and meaning (Wang & Burris, 1997), visual data give insight into how participants construct meaning from the chosen images (Mitchell, 2011). Saldaña (2013) stated,

Just as no two people most likely interpret a passage of text the same way, they won't interpret a visual image in the same way. Each of us bring our background experiences, value system, and disciplinary expertise to the processing of the visual, and thus our personal reactions, reflections, and refractions. (p. 54)

Photovoice data can become richer by participants reflecting and adding captions to selected photos. By doing so, the researcher has the opportunity to analyze the selection of the

photo, and participants construct the experiences conveyed in the photo. Ruby (1995), as cited in Mitchell (2011), stated, "the study of images alone, as objects whose meaning is intrinsic to them is a mistaken method if you are interested in the ways people assign meaning to pictures" (p. 5). Reflections highlight a participant's construction and interpretation of what the photograph entails (Mitchell, 2011).

According to Hansen-Ketchum and Myrick (2008), the "ontological and epistemological lenses through which research problems are conceived and studies designed provide insight into the rationale for the use of photo methods" (p. 205). This study utilized the ontology of realism and a constructionism epistemology. Realism asserts, "there are real objects that exist independently of our knowledge of their existence" (Schwandt, 1997, p. 133). For realists, entities of the outside world are real, but are interpreted differently based on an individual's frameworks brought to the interaction. Reality exists separate from our minds and determines how we engage with others to learn (Turner, 2008). A constructionism epistemology describes the relationship between the knowledge and the researcher (Crotty, 2010). Meaning is not discovered but constructed through interaction between the participant and the experience (Denzin & Lincoln, 2000). People may construct meaning in different ways, even in relation to the same experience.

Constructivism was used as the theoretical perspective for this study and is defined as "meaning making and constructing of social and psychological worlds within the individual through cognitive processes" (Young & Collin, 2004, p. 375). Constructivism "points out the unique experience of each of us. It suggests that each one's way of making sense of the world is valid and worthy of respect as any other, thereby tending to scotch any hint of critical spirit" (Crotty, 2010, p. 58). Constructivism challenges the individual to reflect on concrete experiences and raise inquiries about the nature of the experience (Merriam, Caffarella, & Baumgartner, 2007).

The researchers involved in the study included three teacher educators and one instructor with a background in agricultural education and qualitative methodology. The teacher educators taught agricultural education in the public school system and are actively involved in preparing pre-service teachers for teaching careers at Oklahoma State University. The lead researcher, who has knowledge and experience as a former secondary teacher and principal, and the lead instructor for the course in which this assignment was provided, served as the photovoice facilitator.

Prior to any photovoice experience, it is important for the facilitator to establish the framework by which photos should be taken and have extensive knowledge of the culture under investigation (Wang et al., 1998). The facilitator sets the tone by providing the photographers with a theme by which to take their pictures. The facilitator for this study proposed that pre-service students ($N = 41$) enrolled in a Foundations and Philosophies of Teaching class visit three different secondary agricultural education programs in Oklahoma and take one picture at each program of *the most prominent take-away from the observation*. Students also were instructed to craft a 250-word reflection statement describing their photo. Students were given these assignments in class at the beginning of the Fall 2014 semester and were required to submit them online by a given point in the semester, as listed in the course syllabus. Data comprised of three submissions per student totaling 123 photographs and reflections. This assignment allowed "students to pay attention to their institution and environment from a different point of view, potentially sharpening their awareness of the problems that they face" (Goodhart et al., 2006, p. 55).

The study employed Saldaña's (2013) method of process coding. Process coding uses gerunds (-'ing' words) to imply action in the data. Codes are transitioned into action to "reserve the fluidity of [the participants'] experience and give you new ways of looking at it. These steps encourage you to begin analysis from their perspective" (Charmaz, 2014, p. 121). Process coding

can occur simultaneously with initial coding, focused coding, and category construction (Saldaña, 2013). Both the photo and reflections were analyzed as one unit of analysis. Each researcher started initial process coding and composed memos throughout the development of codes. Memos entailed researcher observations, impressions, and knowledge to provide context and build a more complete picture of the students' overall experience (Charmaz, 2014). Following initial coding, researchers conducted focused coding independently before meeting with the research team to discuss the codes and negotiate categories. Categories were grouped into themes relying on codes and memos.

To achieve trustworthiness, the following areas were considered: rigor, sincerity, resonance, ethics, and credibility (Tracy, 2010). Data were collected from various agricultural education programs in Oklahoma. Four researchers experienced in qualitative methods analyzed the data, reviewed codes and memos, and developed categories. Data collection and analysis remained transparent, and researchers disclosed their reflexivity to achieve sincerity and meet ethical standards. Additionally, data were presented through direct quotes and thick description to verify themes. By using gerund codes, researchers tied processes back to the experience, resulting in naturalistic generalizations. To increase credibility, thick description was provided that elucidated both the behaviors and context, ultimately leading to crystallization of the data. Crystallization was achieved through gathering data over time to bring about a larger and clearer picture of the phenomenon of interest. Through the use of data sources and memos, multiple accounts of the same story were shared (Tracy, 2010).

Findings and Conclusions

From 123 photovoice submissions, 310 initial process codes were extracted from the data. The research team negotiated 28 focused codes, which were compressed into 13 axial codes or categories. The categories were deduced into six themes: (a) optimizing student aperture, (b) affirming the decision to teach, (c) identifying learning strategy outcomes, (d) balancing the three components of agricultural education, and (e) creating a felt need to learn.

Optimizing Teacher Aperture

In photography, optimizing aperture broadens the depth of field bringing greater detail to elements outside the actual plane of focus. This process of optimizing the perspective was ever present in the students' photos and reflections. Following the analogy, the actual plane of focus for these teachers was their lived experience as a secondary agricultural education student. Participant 12 observed her home program, and reflected on the greater depth of field.

> My last observation was in my home chapter of [Town] but it all seemed much different. After taking this course and learning more about the classroom operations and lesson planning, I was able to see my chapter in a much different light. I hate to be critical of my own chapter but it was kind of the example of what not to do in the classroom. (12:3)

There were several "AHA" moments I had throughout the day; the main thing I really enjoyed about Norman was how the shop was laid out. Mr. [Teacher] designed the shop when he was hired. He especially wanted walls to separate the welding booths, which are pictured above. If I am ever asked to lie (sic) out a shop I will ensure that there are walls to separate the welding booths instead of the standard tinted plastic. (16:2)

In the photo above, a sign language instructor has been brought in for the special needs students in the class so that way all students can understand what the teacher is saying. There were a few deaf students in the Agriculture classroom, which can make teaching rather hard for new instructors. (26:1)

Figure 1. Photographs and reflections from participant 16 and participant 26.

Other students did not observe their home program, but repeatedly drew on that experience in resolving conflicts while observing other programs. Seven different teachers referenced their home program in this learning process. One student began the reflection by stating that the program observed was "*very similar to my hometown – very small*" (30:2). Participant 25 took a photo of laboratory facilities and shared that, "*facilities close to the classroom was very interesting to me coming from a program that had its own building off campus*" (25:2).

Through this process of comparison, numerous students found student diversity to be a concept unseen prior to viewing programs through the wider lens of an educator. The enhanced awareness of student diversity was emulated through several photo reflections: (a) *"many of his students are poor, and go to an alternative schooling. With that being said, not many students can afford to keep an animal or take care of one" (4:1);* (b) "*I've never had to experience that kind of socioeconomic status. [School] was the most diverse school that I went to. It was diverse in culture, race, socioeconomic status, and learning abilities" (10:3);* (c) *"I learned that the kids in the chapter did not come from the best home lives and the department gave them a place to call home at school" (15:3);* and (d) "*This aquaculture system can give students an option to use for an SAE project – especially for students of lower socioeconomic families. The project is at school so they can check it daily. Plus, it's not as expensive as most projects would be for an SAE" (24:2).* Interestingly, the majority of teachers noted socioeconomic diversity rather than racial diversity, which is congruent with the demographics of observation sites selected.

The optimized aperture brought into focus how important facilities and laboratories are to the success of any agricultural education program. Pre-service teachers began to envision themselves in their own program and often spoke of facility envy – cataloging examples they deemed worthy. This is a product of EFE, discussed by Myers and Dyer (2004). The photo shared for this theme (see Figure 1) by participant 16 highlighted these "*AHA*" moments. Others shared, "*the greenhouse grabbed my attention because it is one of the greatest forms of application there*

is in an agricultural education program" (29:3), and "*I picked this photo, because it shows off the great new classroom. The facilities had a classroom, plenty of storage rooms, bathrooms, a teacher's office where she could see in the classroom, and a huge welding shop" (15:1).*

Affirming the Decision to Teach

Having something for everyone, at [Chapter] Mr. [Teacher] and his students practice every Sunday evening for trap and skeet. This is how he reaches this group of students. Visiting this school has helped to show me that everything doesn't have to be about livestock like a lot of schools in Oklahoma. You can have your specialty but offering more opportunities to get more students involved is more valuable to me than having a champion steer at the county fair. This visit truly made me more confident in my abilities as a future teacher. (25:1)

What I took away most from this experience is just how passionate someone can be about their job. In the picture above, it displays Mr. [Teacher]'s scrapbook from when he was in FFA. The scrapbook showed years of history and projects that helped to make him into the great ag teacher he is today. Looking through this book between classes, I realize that I hope to continue to develop a lifelong passion for education and agriculture that will help me to become a great teacher and role model for students. (15:3)

Figure 2. Photographs and reflections from participant 25 and participant 15.

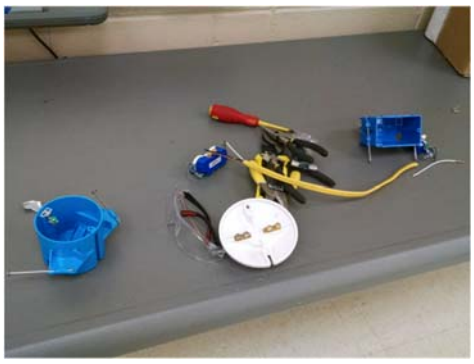
Pre-service teachers' decision to teach agriculture was affirmed through the EFE experience. This was encouraging when considering that the interactions associated with an EFE have been found to be the most influential – both positively and negatively (Zuch, 2000). As depicted in the two selected images and reflections (see Figure 2), students reconnected to the affective domains of teaching that drew them to the career originally. Participant 25 seemed to gain affirmation in his abilities as a teacher while participant 15 described an agricultural education revival where he seemed to reconnect to his passion for agriculture and education. The potentially powerful connection between pre-service and cooperating teacher also was evident. Participant 16 reflected, "*Mr. [Teacher] was very uplifting and encouraging, and as a college student a few kind words can make all the difference*" (15:2).

Participant 9 shared, "*More than anything, though, it was very inspirational and reassuring for me to see a female ag teacher at a one teacher program doing as well as she is" (9:2).* In a predominantly male dominated profession that is experiencing an increase in female pre-service teachers, this valuable affirmation highlighted the importance a well-planned EFE could have on female teachers' decision to teach to seek solutions in reducing the gender bias in agricultural educators. Various pre-service teachers found affirmation in relating to early career teachers. Participant 28 wrote, "*Mr. [Teacher] is still learning the ropes as a teacher; it was a good look at what my life will be like in just a few years*" (28:3). Though most conclusions seemed to align with

our teacher education philosophies, a number of photos depicted theories that warranted further clarification. "*That's why when I become an agricultural educator I plan to encourage all my students to show livestock*" (5:1). We, as teacher educators, would hope to develop further the conclusion of Participant 5 to be more inclusive and career relevant. Career exploration, noted as the primary outcome of exploratory EFE integration (Retallick & Miller, 2010), was one of the primary learning outcomes for pre-service teachers in this study.

Identifying Learning Strategy Outcomes

The student pictured above is the one student with previous welding experience; however, he was struggling the day I was there. It was determined the student had not successfully grinded all of the powder coating off the existing metal. She was being a very hands-on teacher and providing discussion afterwards as to what had happened. Ms. [Teacher] would not have been able to properly help him or lead a discussion about what was going on if she had not become actively engaged in the project and appraised the situation herself. (14:1)



Pictured above are the basic items someone would need to understand to begin learning electricity. Looking at these items seems insignificant but, how they were presented over a two-hour lesson was something to witness. As a student of Ag Education it was a sight to see this teacher interact with his students in a very realistic and engaging way. Every student had questions to ask and Mr. [Teacher] always had an answer for them. The whole spectacle was a classic and well executed show and tell/ student inquiry method. (20:1)

Figure 3. Photographs and reflections from participant 14 and participant 20.

Pre-service teachers identified good and bad teaching, and they were drawn to the respective learner consequences. However, they struggled to name or describe fully the strategies being observed. Participants 14 and 20 (see Figure 3) recognized the effectiveness of the approach employed by the teacher, but relied on their own personal labels for those methods. Participant 20 explained that, "*the whole spectacle was a classic and well executed show and tell/student inquiry method*" (20:1). Teachers were judging good and bad learning strategies by the resulting student behavior. One teacher shared "*This was a great opportunity to see the importance of varied teaching methods to appeal to the variety of learners present in a classroom*" (22:1), and another reflected, "*It was so interesting to see how such a simple project had the students engaged and had them using their own creativity. It is a project that is entertaining and something that could be incorporated instead of the basic lecture*" (29:3). In response to a picture of small floral arrangements, a student concluded that, "*Not only did she have the interest of the students, she also had them thinking in the process of how they would place the different flowers*" (29:1).

Though numerous positive examples were shared, one student also identified areas of growth – "His main teaching style was lecture. His agricultural power and technology class was a hands on class, but no major teaching went on" (19:1). Another student reflected on a picture of a classroom, "The content was great . . . the delivery was less than stellar. I actually was very close to falling asleep . . . and the students weren't fairing much better" (9:1). Identifying poor strategies and resulting negative products led to rich student reflection and thought. In contrast, participant two noted, "She asked them if they were awake and so they had the choice to say yes or no. Giving students a choice is also something I will do" (2:3), and participant 2 shared, "I thought that this was a very good representation of how sometimes ag teachers have to fly by the seat of their pants" (2:1)

Balancing the Three Components of Agricultural Education

This was the first sight I saw when approaching the agricultural education building at [School Name] High School. The poster of the Three Circle Model with Mr. [Teacher]'s contact information under it was not only for looks. It was apparent that Mr. [Teacher] desired to construct his classroom as balanced between FFA, SAE, and classroom as possible. (10:3)

I picked this picture, because I think it describes [Chapter] FFA. They are a career development event and public speaking chapter. While I was in [City Name] observing for the day, I caught onto the fact that everything they taught had something to do with a CDE contest. This picture represents what was lacking which is teaching content besides contest material. (15:2)

Figure 4. Photographs and reflections from participant 10 and participant 15.

Pre-service teachers learned that the task of managing classroom instruction, a student organization, and supervised agricultural experience programs was important but difficult. The tension and internal teacher battle associated with the pressures of winning, teaching, and advising was obvious. The photos and reflections provided for this theme (see Figure 4) highlight both the idealistic balanced philosophy as well as the darker realization that choices are often made based on external pressures. Participant 22 shared, "*Ms. [Teacher] emphasized that with her busy schedule managing both the FFA and 4-H programs she was thankful her years of experience allow her to use only basic plans when planning for instruction*" (22:2). Participant 8 engaged in this discourse by capturing an agricultural educator at a SMART® Board and shared, "*the biggest takeaway is it is not about the awards, recognition, or fame. It is about inspiring students to do their best, instill values, and educate students about agriculture*" (8:2). Researcher memos discussed that this could be the three-circle philosophy of this student – viewed as outcomes rather than processes. Similarly, participant 15 shared a picture of a wall filled with trophies from floor to ceiling and concluded, "*although I think CDE's have their place in the classroom, I do not think it is all an agriculture educator should care about. What is missing in this picture is teaching*

content besides contest material" (15:2). Interestingly, this teacher identified contest material and agricultural content as different curriculums.

Pre-service teachers repeatedly noted the added responsibilities associated with managing the full agricultural education program – not just the classroom. Various students noted themselves as different than the standard classroom general education teacher. Describing a picture of three students with animal SAE projects, participant 4 shared, "*That is why I believe becoming an Ag Teacher is much more than just being a regular teacher*" (4:1). Reflecting on a picture of a white board filled with leadership conferences and contest dates, the teacher reflected, "*I feel like planning for these events will take a big part in lesson planning because certain content needs to be taught by the teacher, not a substitute*" (7:2). Reflecting on a photo of a calendar of events, participant 17 shared,

> *He is constantly taking CDE teams or individuals to contests, staying after school to practice with those teams, holding FFA chapter meetings, keeping watch over chapter animals, and much more. The agricultural education teacher has a ton on their plate and it takes hard work and dedication to run a complete program." (17*:2)

One student typified a common abstraction in describing a picture of plaques and awards. "*It was almost like the teachers had lost their passion in a way. In the end, trophies don't mean anything. I'd rather lose and be passionate than win and be bored with my job*" (9:1).

Creating a Felt Need to Learn

Having not graduated from a school with an agricultural education program, I have had very little "shop" experience and was in awe the whole time. I found myself staring at these finished products (along with a round bale feeder not pictured) and thought about all the different tasks, projects, curriculums, contests, and teaching methods agricultural educators either participate in or utilize in their classrooms. Agricultural educators are certainly supposed to be a jack-of-all-trades when it comes to topics and skills covered by our courses. (17:3)

It took Mr. [Name] a week to comprehend basic electricity concepts, but that is not what his students thought. They thought that he had known it since birth. My greatest takeaway from [School] High School was that even older teachers need preparation. When I heard that we were sitting through two classes of the same lecture I assumed that I would be easily bored. However, I found myself asking questions about electricity in front of the class as well. (10:1)

Figure 5. Photographs and reflections from participant 17 and participant 10.

Pre-service teachers realized the need to grow in their knowledge and skills in agriculture. Often, these pre-service teachers observed instruction, projects, and required skill sets far above their perceived abilities, as described by participant 17 (see Figure 5). Though it was expected that students would begin to doubt their decision to teach, an alternative conclusion was often shared.

Mr. [Teacher] asked me if I have ever worked concrete before and I said yes. Then [I] wound up helping teach him and the class how to mix the concrete with the correct texture for their application. This was because he had never worked it before. This was reassuring to me that you don't have to be an expert at everything to be a good teacher but be willing to learn. (25:3)

In reflecting on a floral arrangement, participant 13 shared that, "*I am not very familiar with floral design, but she assured us that it is very simple to learn and the students will love the hands on activities" (13:3)*. Participant 10 (see Figure 5) came to the realization that learning the science and skills of agriculture is not a task to be completed, but a lifelong process.

Discussion and Praxis

Reflecting on the findings of this study, four of the six purposes (Scherer, 1979) of an effective EFE were accomplished. Pre-service teachers examined their own perceptions as a teacher, reduced anxiety leading to an affirmation to remain in agricultural education, and became more aware of the realities of school settings and advanced in their understanding of students and learning. We did not find evidence of enhanced self-confidence in their ability to teach or the acquisition of specific teaching skills. In our analysis, the two elements not achieved would require active experimentation in teaching – an element we removed, purposefully. Perhaps it would bring greater clarity to distinguish between early field experiences and early field observations (EFO) to clarify the specific processes associated with the *Exploratory* outcomes noted in Retallick's and Miller's (2010) model for EFE.

In the *Exploratory* phase of teacher development, active experimentation (Kolb, 2015) is removed purposefully from the approach relieving teachers from anxiety and pressure. Schmidt (2010) synthesized Dewey's (1934) work sharing that "too much emphasis on mechanical 'doing' may result in an experience of 'almost incredible paucity, all on the surface'" (p. 141). Our concept of *Optimizing Teacher Aperture* was congruent with the notion purported by Knowles and Cole (1996) explaining that when students are called to teach, delivering the lesson becomes the actual plane of focus and all other factors lose focus. Completing a true EFO as utilized in this case led to a broader focus that included the classroom, community involvement, school bureaucracy, diversity, use of facilities, supervision of student projects, and advising of the youth organization.

Smalley and Retallick (2012) suggested that an exploratory EFE *could* lead to higher recruitment and retention of teachers, which must be considered in agricultural education with the current teacher shortage (Foster, Lawver, & Smith, 2014). The opportunity to engage in an EFO, with the freedom to observe and the absence of the pressure to teach, seemed to accomplish exactly what Smalley and Retallick (2012) predicted. Students who have experienced the "reality shock" of teaching early in their teacher preparation program maintained a tempered idealism, a more realistic positive outlook on teaching, and ultimately are retained in the teaching profession (Scherer, 1979, p. 213). We would echo the sentiment of Schmidt (2010) and Nierman, Zeichner, and Hobbel (2002) in recommending more EFO opportunities to bring early context, relevance, and discourse to the teacher education process.

Mental models and the process of theory development, as described by Korthagen and Kessels (1999), captured the essence of how meaning was constructed through the EFOs. This

conceptual model seems to reflect the five learning outcomes embedded in the *Implementation* section of Retallick's and Miller's (2010) model for EFE development, clarifying further the process leading to the noted outcomes. Congruent to the observation of Schmidt (2010), it was evident that the EFO brought relevance to course concepts and theories and prompted the reflection and refinement of personal gestalts and schemas with support from cooperating teachers, fellow peers, and university supervisors.

This study focused on the *Exploratory* element of the Model for Early Field Experiences in Teacher Education (Retallick & Miller, 2010). Though the model and accompanying literature provided an adequate framework for the EFE process, the *Interaction* portion of the model seemed to suggest a progression from interaction with peers and university supervisors during exploratory strategies to interaction with students and cooperating teachers during the transition to student teaching. We suggest highlighting the constant need for interaction between all four of the noted partners – peers, university supervisors, students, and cooperating teachers. Albers and Goodman (2006) shared that "when we begin to invite cooperating teachers into our university conversations, we can begin to open up ways in which we work. The triadic set of discourses . . . creates good educative environments" (p. 117). Teacher education programs should seek creative ways to involve cooperating teachers as experts in the teacher education process. Suggestions include using Skype™ to include cooperating teachers in course sessions, inviting cooperators for panel discussions, creating expert video series of various cooperators to use in flipped classroom approaches, and having pre-service teachers share their gestalt theories with cooperators to help refine them through interaction with the cooperating teacher.

It was encouraging to find such a strong focus on student diversity in the student photographs and reflections. Teacher education programs are criticized constantly for not preparing pre-service teachers adequately to connect with students from diverse backgrounds (Coffey, 2010). The decision to require three observations, the purposeful selection of cooperating sites, and a focus on diversity in the course content seemed to bring into focus the importance of inclusion and respect. Talbert and Edwin (2008) warned, "care must be given to avoid a narrow focus upon cultural differences alone" (p. 59), and explained further the four categories of diversity as gender, ethnicity, socioeconomic status (SES), and geography. Interestingly, in our study the primary focus was on SES and students with disabilities, which seems to be logical considering the population of students represented in [State's] secondary school systems.

Talbert and Edwin (2008) suggested designing an EFE to expose students to each category of diversity, but this presents a somewhat cyclical dilemma in diversity exposure – how can we expose students to diversity that does not exist within agricultural education in our state? Pre-service teachers enter the teacher education program with strong beliefs rooted in their personal, and typically quite homogenous, school experiences (Darling-Hammond, 2006). These beliefs are unlikely to change unless they are provided experiences that challenge their validity (Feiman-Nemser & Buchman, 1987). Agricultural education teacher preparation programs may have to look outside of our own classrooms for this challenging experience. Perhaps it would benefit our pre-service teachers to observe classrooms outside of agricultural education, engage in community-based field experiences to provide insight into students' lives outside of school (Coffey, 2010), and connect with cooperating teachers more purposefully to discuss creating safe environments where all are respected and can succeed.

A number of additional research questions for future consideration arose:

- At what point are opportunities for active experimentation beneficial to pre-service teachers' growth and confidence?

- How would an EFO in classrooms outside of agricultural education expand or challenge the Gestalts or theories students hold when they arrive at the university?
- Over the course of the teacher preparation program, how is teacher self-concept affected by each field experience?

Summary

Being an effective agricultural education teacher is a rigorous and multifaceted responsibility (Roberts & Dyer, 2004). As such, agricultural teacher education programs should expose students to and make them aware of the vast array of opportunities and responsibilities related to teaching agricultural education. Understanding how students' perceive the realities of the job is vital to improving their repertoire for success. Pre-service teachers should be empowered and encouraged to see and experience agricultural education taught differently than what they received or witnessed as secondary students. These experiences should happen early and often in their preparation program (Retallick & Miller, 2007a and b). When allowed, students are confronted with new ideas, thoughts, and perceptions about teaching agriculture. Sometimes what students experience in early field observations is in conflict with what they thought they knew about the profession.

During these times of discourse, it is imperative that teacher educators be present to help fill in the gaps as pre-service teachers make sense of their new learning. Photovoice is a natural method for allowing students to experience a situation, capture lasting images that make an impact on their experience, reflect on the experience by voicing their perceptions either aloud or through written form, and receive instruction from those who can help them make sense of the experience. Teacher educators play a crucial role in this process by helping pre-service teachers accentuate the ideals and opportunities that can and should be afforded to students in secondary agricultural education programs while preventing them from drawing misinformed or erroneous conclusions.

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