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Action Research and Project Approach: Journey of an Early Childhood Pre-service Teacher and a Teacher Educator

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Action Research and Project Approach: The Journey of an Early Childhood Pre-service Teacher and a Teacher Educator

Ellie Wastin and Heejeong Sophia Han

Abstract

The purpose of this article is to share an action research study conducted by an early childhood pre-service teacher in a Kindergarten classroom. There were dual goals for this action research: (a) to enhance pre-service teacher's questioning and classroom management strategies, and (b) to enhance Kindergarten children's scientific inquiry and knowledge. A teacher guided mini-project approach was adopted as a main instructional methodology for a 'Rain and Water Cycle' project. Using video, we documented self-reflection and feedback. Through this experience, the pre-service teacher gained both knowledge and confidence. At the same time, the Kindergarten children took an active role in investigating the 'Rain and Water Cycle' through a variety of hands-on learning experiences. Based upon children's work samples and other documentation, it was evident that their cognitive growth and learning, especially who were typically performing at the below grade level, was extensive. Challenges and possibilities related to pre-service teacher action research within the early childhood teacher preparation programs are shared. Ideas for adopting action research frameworks to reconceptualize early field internships are also discussed.

Studies of action research conducted by in-service teachers present a number of positive findings. Teachers became more reflective, critical, and analytical about their teaching (Levin & Rock, 2003) and gain improved understanding of themselves as researchers (Ginns et al., 2001). While much attention has been paid to action research conducted by in-service teachers, there is an absence of such research involving pre-service teachers (Gitlin et al., 1999; Price, 2001; Smith & Sela, 2005). However, as many teacher education programs in the nation embrace the importance of reflective and practical learning experiences for pre-service teachers, it is a prime time for expanding this body of work. Bolstered by growing conversations related to clinically grounded teacher education reform (NCATE, 2010; Ziechner, 2010), most pre-service teachers are spending significantly more time in field placements. In addition, inquiry based learning is gaining attention within the current school reform efforts. We argue that tensions between educational theory and classroom practices could be reduced through reflective self-inquiry process (Dana & Yendol-Silva, 2009; Moran, 2007). Early childhood teacher educators have advocated for inquiry-based learning as being particularly applicable and meaningful in early childhood contexts (Castle, 2012; Helm & Katz, 2011; Rust, 2007; Wheeler & Blank, 2011).

The purpose of this article is to share an action research project conducted by an early childhood pre-service teacher in a Kindergarten classroom during her first year in the program. A description of the action research project and the researchers' ensuing reflections will be presented in the following section through the voices of both the pre-service teacher, Ellie, and the teacher educator, Dr. Han. All names of people and places are pseudonyms with the exception of the authors'.

Introducing Action Research to a Pre-service Teacher: A Teacher Educator's Story

This case is situated within an Early Childhood Education (ECE) program at a major state university in the southeastern region of the United States. At this institution, the ECE program is designed to provide pre-service teachers with diverse field experiences, both in terms of age groups as well as school settings. During the first semester, all the pre-service teachers are placed in preschool classrooms for two half days per week. Then, during the second semester, they are all placed in Kindergarten classrooms for two days a week – one full day and one half day. All of the coursework is cohesively integrated based on the pre-service teachers' field placements, and they are formally observed twice by the university supervisor during each semester following the guided learning experience of lesson planning, implementation, and reflection.

I, Dr. Han, am a faculty member in the ECE program, and was an instructor for the second semester internship course. As a university supervisor, I was responsible for mentoring a total of 27 pre-service teachers during their Kindergarten internship, and Ellie was one of them. I had considered the possibility of introducing action research to the pre-service teachers within this internship experience; however, I was somewhat reluctant due to the structure of the internship as well as the developmental stage of our pre-service teachers. Simply speaking, I thought it would be too much to accomplish. Nonetheless, the idea for Ellie's action research project was conceived during her first formal observation cycle. Like many great teachers, Ellie was engaging in the action research process without recognizing it (Castle, 2012; Dana & Yendol-Silva, 2009). Ellie excelled throughout the process. She was less concerned about teaching a 'safe' lesson, especially when I observed, but wanted to teach a meaningful lesson that could make a difference for students and bring about changes for herself. This was not always the case for most pre-service teachers who typically think of internship as an assignment that they have to complete and generally focus on getting a good grade. I was impressed with Ellie's thinking and decided to hold an additional debriefing session in which I introduced her to action research as a systematic process used to gather information about practice and subsequently improve teaching and their students' learning in an educational setting (Mills, 2000). When I asked Ellie if she was interested in more systematic engagement with action research, she was instantly excited about the possibility. At that point, she was already planning her second observation lesson inspired by the project approach. This is how Ellie's action research began.

Action Research with Kindergarteners: A Pre-service Teacher's Story

My Contexts

I, Ellie Wastin, am a first year pre-service teacher in the ECE program. This action research took place when I was placed in Mrs. Holly's inclusive Kindergarten classroom with nine boys and ten girls - three were identified as having special needs and two were ESOL students. The school was located in an upper-middle class suburban neighborhood. Mrs. Holly was very welcoming and I occasionally volunteered to visit her classroom on days I was not assigned to be there in order to gain more experience and spend more time with the children. Mrs. Holly, in turn, allowed me to co-teach with her throughout the semester, exposing me to many teaching experiences, rather than just asking me to carry out the required assignments, for which I am very grateful.

For our internships, we were taught to plan lessons using ideas and information we learned in coursework and to consult with our mentor teachers before implementation. Afterwards, we reflected on the lessons and were provided with the feedback from our mentor teachers and the university supervisors. I thought this was a great way to help me to improve my teaching strategies. When Dr. Han introduced me to the concept of action research, I was surprised to realize that it was deeply integrated with our field

experience without us really being aware of it. Our professors teach us to plan, implement, and reflect on each of our lessons. They had us analyze not only our own teaching practices but also what children learned from our lesson in order to plan for next steps. These are the basic practices of action research. As I spoke with Dr. Han and read several articles about how others enacted action research, I was motivated to take on my next lesson within an action research framework. I brought dual goals to my very first action research project: (a) to enhance my questioning and classroom management strategies, and (b) to enhance my Kindergarten children's scientific inquiry and knowledge.

My Action Research Goals

My first action research goal came from my belief that at this stage in my education, as a pre-service teacher, it was my responsibility to hone my skills and challenge myself to be a better teacher so that I could impact children that enter my classroom in the future. I believe at this stage, it is imperative that I get the feedback I need to flourish and develop to my full potential so that I will be ready to develop the framework of a classroom that breeds successful children. In order for me to reach this goal, I planned to have Dr. Han observe and videotape me teaching a rain simulation experiment lesson. I wanted to challenge myself to be assessed on a lesson that was not conventional and would test my classroom management skills in order to get feedback on how this part of my education was developing. Then, I viewed myself on the video in order to analyze my questioning and classroom management strategies. I also spoke with both Mrs. Holly and Dr. Han to receive their feedback on my overall teaching.

My second action research goal came from my observations of Kindergarten science lessons and their centering on literatures as opposed to hands-on scientific inquiry. Whenever science was incorporated into the curriculum, it was mainly through reading science content books or by adding scientific vocabularies (i.e., predicting, estimating, etc). I have learned and maintained my belief that children at this age learn better through direct experiences. Thus, I wanted to expose my children to more meaningful and engaging scientific inquiry by incorporating experiments that not only provide hands-on activity but also require reflection and analytical thinking in order for deeper learning to occur. To this end, the mini-project approach was adopted as a main instructional approach for me to teach a series of 'Rain and Water Cycle' lessons.

My Project Approach on the Theme of 'Rain and Water Cycle'

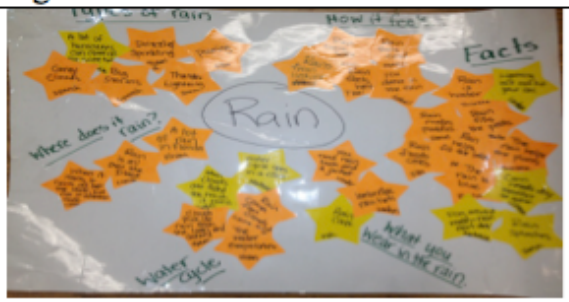
"Children in schools today will exist in a world that we can only imagine… They will need to be critical and creative thinkers and be able to work on teams collaborating within organizations with a diverse membership. They will need to be able to take initiative and integrate all they are learning from different disciplines. Most of all, they will need to be flexible and eager to learn new skills and adapt to rapidly changing challenges." (Helm & Katz, 2011, p. 1). All of these things are demonstrated and taught throughout implementation of the project approach. With the project approach, one is able to teach subjects such as math, science, social studies, technology as well as literacy in an interrelated way, all while encouraging collaborative learning amongst their peers. I am a firm believer in what the project approach can accomplish within a classroom. Children can then use these investigative techniques that incorporate different subject areas and apply these skills to anything that interests them later on in life – something that drilling topics separately can never achieve. Their problem solving and critical thinking skills flourish with this approach. Perhaps the most beneficial fact about the project approach is that teachers can tie the investigation to state standards rather easily, providing not only meaningful learning experiences for their children, but also reaching the requirements of state standards while doing so. In fact, as Helm and Katz (2011) point out, "project work is now included in most recommendations for educational reform." (p.1).

In speaking with Mrs. Holly, I was able to deduce that the class would soon be beginning a unit on weather. I was eager to stick within the curriculum they were currently learning about, but wanted to take an aspect of it deeper. I concluded that as we live in Florida, all the children will have had prior experience with rain which makes the topic relevant (Bredekamp & Coople, 2009). My intent was that children would gain hands-on experience with scientific inquiry and explore the rain and water cycle to a deeper degree than typical in the Kindergarten curriculum. Given the nature of my internship timeframe, I chose to use a teacher guided mini-project approach that consists of three phrases described below.

Phase 1.

The purpose of Phase 1 is to identify the topic by having young investigators figure out what they want to know (Helm & Katz, 2011). Ideally, it is the children that initiate the project idea; however, due to the nature and time constraints of the mini project, I introduced the topic of rain based on the unit on weather. For Phase 1, we created a class web where I extracted their prior knowledge about rain and where it comes from. Afterwards, we explored three different books about rain and weather to expand our knowledge and gather more information. We then returned to the web and added to what we knew about rain (see Figure 1).

Figure 1. Web from Phase 1



This is the first web we created together as a class. The orange stars are what they knew before we began exploring the topic. The yellow stars are what we added after we read our first books about rain and weather.
Watching the children categorize was interesting. It did require some prompting from me. I began by asking if two different things belonged in the same category. As we progressed, they were able to place the post-it into its corresponding category as a group.

Figure 2. Writing from Phase 1

Kevin picked sunny weather. His writing says: "First, check the weather. It is suny. Next, I get rede. I put on a tac top. Lastly, I play bascetbool."

Being that he chose to write about sunny weather, he chose to wear a tank top and play basketball. This showed me that he understood how weather affects his day.

During the construction of the web, I was able to assess the children's prior knowledge and see how they categorize their ideas. We successfully voted on where to categorize the information and which web to display, showcasing our ability to use democratic skills. We also made references to our prior observations of rain and weather, tapping into our scientific inquiry skills. The children built on their knowledge and comprehension of the subject through discussions, non-fiction readings and questions that both the children and I raised. I made sure to encourage the use of new vocabulary throughout the project. On the first day, the writing assignment stemmed from the book "What Will the Weather Be?" by Linda DeWitt. I used a step-by-step guide that connected transition words and sequencing to the assignment. The prompt was "How to get ready" with checking the weather being the first item. I wanted to create an awareness of the weather among the children as to how it affects us - for example, what we wear and do for the day. They were to pick the type of weather they wanted to write about and list the steps about what they would do afterwards (see Figure 2).

We started the investigation with how weather affects us and then journeyed into why it rains, delving into the water cycle for Phase 2. The project took the route of exploring the water cycle from this point forward as they seemed to already understand how weather affects them on a regular basis. I think it was a good way to explore the topic and their prior knowledge and now we were ready to explore the questions, "why does it rain?" and "where does rain come from?"

Phase 2.

The purpose of Phase 2 is to investigate the topic with in-depth study of the questions posed in Phase 1 through hands-on experiences (Helm & Katz, 2011). In this phase, the children learned to gather data over a two-week span for our rain measure experiment, exploring mathematic skills. They also performed a rain simulation experiment and referenced secondary resources for more information working on scientific inquiry. The children continued to showcase their knowledge through reflective writings and discussions.

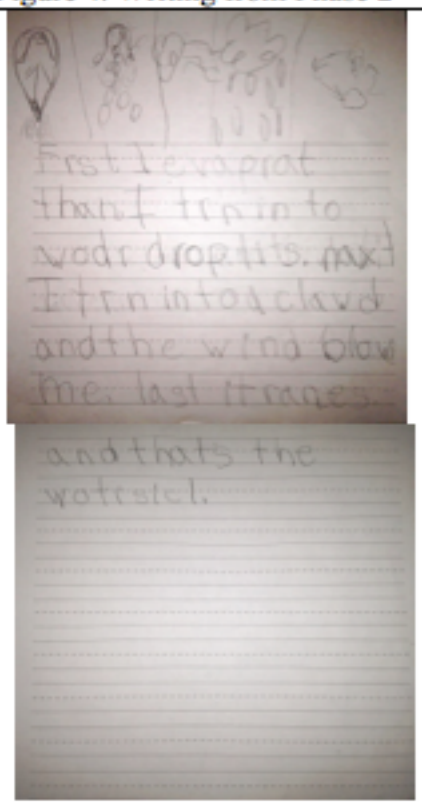
We watched the Magic School Bus video where the class goes on a "field trip" through the water cycle as a secondary resource. The writing prompt was to tell a story as if they were a rain drop and what their journey through the water cycle would entail. This assignment engaged all children, even the below level writers wrote more than I have seen before (see Figure 3 and 4).

Figure 3. Writing from Phase 2

In Sara's writing, she wrote "I em a leto ramjrop. Watersikool." ["I am a little raindrop. Water cycle!"]

Sara is considered one of the lower performing learners in the class. Her writing has progressed tremendously over the year, from early phonemic spelling without spaces to transitional spelling with spaces, however, she still struggles. During this lesson, she was engaged and was eager to learn more. This is a perfect example of children's use of different languages. Although her writing is short, her picture clearly demonstrates that she understand the entire cycle.

Figure 4. Writing from Phase 2



Candice wrote "Erst I evaprat than I trn in to wodr droplits. Next, I trn into a clawd and the wind blows me. Last it rnes and that's the wotrsicl." ["First, I evaporate. Then, I turn into a water droplet. Next, I turn into a cloud and the wind blows me. Last, it rains and that is the water cycle."]

Candice wrote more than I have ever seen her write. She even used transition words that they have been working on in class. Her drawing also showcases her understanding of different stages of the water cycle, and her writing reinforces her understanding

As a class, we set up our first rain measure experiment outside by the playground at the school (see Figure 5). The children checked the measuring cup and recorded the results every day for two weeks. Unfortunately, it did not rain much during these two weeks. Children, nonetheless, helped me measure with a ruler to see how many inches the rainfall equaled as we learned from the internet research that rainfall is recorded in inches.

Next, the class did an experiment to simulate rain fall (see Figure 6). I used clear plastic cups, shaving cream, water and blue food coloring for the experiment. I explained that we were going to pretend that the shaving cream on top of the water was a cloud and that when clouds get too heavy and full of rain drops it rains, which is called precipitation. I chose this experiment to implement because I wanted the children to engage in a hands-on scientific experiment. I also wanted to emphasize the concept that when clouds get too full and heavy, it rains. This experiment did both. My first attempt to demonstrate the experiment wasn't successful as I had made too big of a 'cloud', but I used this moment to teach them not to put too much shaving cream in their cups. At the end of the experiment, we decided to save the cups and observe what happens to them over time. We revisited it later and I asked the students for observations about the "cloud" and the color of the water as it had deepened and the shaving cream had begun to disintegrate. In addition, this was the part of my project that I asked Dr. Han to formally observe and videotape my teaching in an effort to reach my first action research goal.

To assess the children's understanding of this experiment, I had originally planned to have them complete a written reflection about what they learned from this experiment. Because the writings from the previous day had been so in-depth and truly amazing, I decided to use a picture of the water cycle and had the students put a star next to the stage of

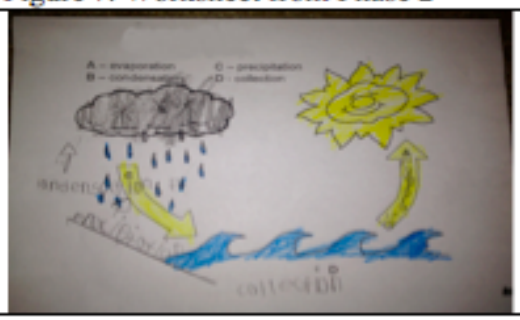
Figure 5. Rain Measurement Experiment from Phase 2

When recording results from the cup, many children were eager for there to be water in it. They concluded that there were "3 drops" one day and "about a table spoon" on another day. This allowed me to teach them to use the measuring cup and ruler later when we estimated with water what our recordings meant.

Figure 6. Rain Simulation Experiment from Phase 2

I used the following description "When rain evaporates it floats up into the sky as a gas and then it gets cold and the water turns back into water droplets. Then the water droplets get together to have a party and when there are enough droplets together at the party they form a cloud. When there are too many water droplets at the party and the cloud is full, they have to start kicking the rain drops out and that's when it rains. Then it starts all over again." This was my basic breakdown of the water cycle that occurred to me on the fly while discussing with the children.

Figure 7. Worksheet from Phase 2



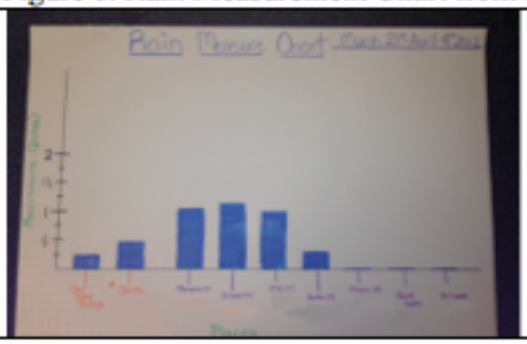
James successfully starred the rain and cloud as the part of the water cycle we simulated in the experiment. He also labeled all four parts of the water cycle with the correct vocabulary.
This was a lot for him as he usually struggles with writing and these are challenging words to write.

the water cycle that we had simulated. I thought it was a more appropriate way to gauge their understanding of the experiment, separating it from the entire water cycle. In order to emphasize the vocabulary associated with the water cycle, the children were encouraged to label the different parts with the appropriate vocabulary or write a sentence about what they learned on the back of the page (see Figure 7). Children's cognitive abilities were most certainly showcased through this phase of the project. Most of the writing samples were amazing and all of the children acquired at least a basic understanding of the water cycle, which led us for the next phase.

Phase 3.

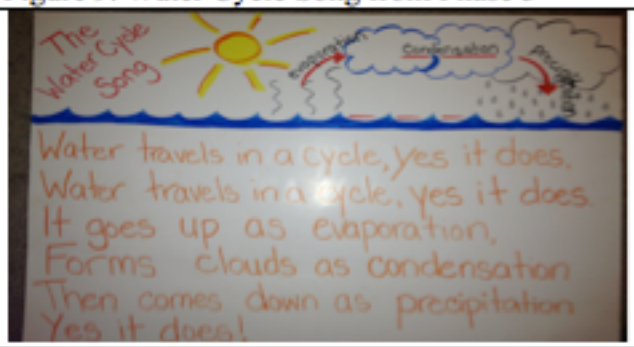
The purpose of Phase 3 is to wrap up the project in a culminating activity and to share with others what they have learned (Helm & Katz, 2011).

Figure 8. Rain Measurement Chart from Phase 2



This graph shows the rainfall in different states and countries that are represented in the class. It also compares our findings to Tampa's official ones. The fact that our findings were less than the recorded rainfall for Tampa was a teachable moment to emphasize the evaporation stage of the water cycle. Quite a few children made this as their prediction of why the results were different, showing again, their understanding of evaporation within the cycle.

Figure 9. Water Cycle Song from Phase 3



The song is sung to the rhythm of "She'll be coming around the mountain when she comes". It reinforces the water cycle and the vocabulary. Children even added an extra "yes it does!" to make it their own. The pictures drawn above are to help the children understand the vocabulary associated with the water cycle.
I have caught a few children singing the song when not prompted during playtime since the end of the project. They were following along with the words as they sang.

With the information from the rain measure experiment during Phase 2, I constructed a graph and the children compared, contrasted, and interpreted the information with some guidance from me (see Figure 8). The children explored the internet with me before I made the graph in order to learn how to gather data online. I connected social studies to this lesson by including the rainfall recordings from all the states and countries the children are from. They really liked this aspect and I believe this gave them a sense of inclusion and pride for what countries and states were represented culturally within our class. Also, we compared our findings with the rain fall experiment to the official city recordings posted online. They were able to deduce the states with the least and greatest amounts of rain without any help. The children also concluded that it was due to evaporation that our recorded findings were less than the reported rainfall for Tampa. Candice said "It's hot outside, maybe the water evaporated." Quite a few others made similar comments and after a discussion, they all agreed that this is why our findings were less than the recorded ones online.

For the culminating activity and to wrap up what we learned, the class learned a song that explains the water cycle utilizing the new vocabularies (see Figure 9). The power that music has on emphasizing concepts amazed me. The children really learned the vocabulary through this song. We sang this song to two other classes to share our knowledge of the water cycle. Two other teachers in the Kindergarten team were nice enough to let us put on a little show for them.

My Findings and Lessons Learned

My first action research goal was to enhance my questioning and classroom management strategies. This was done through my thorough planning for all the lesson plans that included step by step instruction and pre-planned questions. I chose to use my rain simulation experiment of Phase 2 for my formal observation when Dr. Han visited and videotaped my teaching, as children are naturally more excited with experiments and thus it would be the best opportunity for me to

test my classroom management skills. In talking with Dr. Han and Mrs. Holly after the observation, both said that I had laid out my steps clearly and did a good job asking appropriate questions throughout the experiment. Watching my video was extremely helpful – seeing myself in action allowed me to realize many things that I may not have, otherwise. For example, I noticed on the video that in order to help one child I turned my back to the class when I could have walked around to the other side of the table. Also, I was looking for Mrs. Holly when the experiment took less time than I planned for and I was a little lost as to how to transition to the next activity. In watching the video, I also noticed that I seemed a lot more comfortable and didn't fidget nearly as much as my earlier observed lessons. Through the video documented self-reflection and feedback, I gained a significant amount of knowledge as well as confidence in my teaching abilities.

My second action research goal was to enhance my Kindergarten children's scientific inquiry and knowledge. I wanted to see for myself the power of the project approach in what the children could learn and how they could become investigators. Through a mini-project on the 'Rain and Water Cycle', children became amateur scientists who took an active role in a multitude of different learning experiences, which incorporated hands-on scientific inquiry, math, writing, literacy, technology as well as social studies. Based upon children's work samples and documentation records, I believe every child in the class, especially those who were typically performing at the below grade level, understood the basics of water cycle through the project, as Mrs. Holly did not teach anything else specifically about the topic. They all understood the concept of water as always being in motion as well as the functions and definitions of the new vocabulary. Furthermore, through this mini-project it became apparent to me that the cognitive growth of these children was extensive. Even from a writing perspective, I observed that they were motivated to write, which was a change from the norm for some children. Many of the struggling writers wrote an entire sentence or more. Their creative writing pieces based on the raindrop prompt were outstanding, and I believe it is because they were highly engaged and interested in the topic. I am a big believer in the benefits of project work and being able to implement even a mini project was an awesome learning experience. It also solidifies my intent on using the project approach within my future classroom.

Challenges and Possibilities of Pre-service Teacher Action Research

A Pre-service Teacher's Reflection

While people may choose to pursue teaching for different reasons, I believe I should be in this profession to make a difference for the children I teach. As good teachers are constantly evolving themselves, I think, it is important to stress that pre-service teachers should truly look at their practice and improve as well as becoming life-long learners ourselves. What better way than through action research where we help ourselves become better as well as share knowledge with others, so they too can learn from our experiences.

I truly believe that pre-service teachers can greatly benefit from participating in an action research experience. I have no doubt that having an opportunity to do action research early on in our program will set us up for future success. However, it can be challenging for a couple of factors. The biggest challenge I had was time. As we are only in the classroom two days per week, it is difficult to go deep into a topic when there is an entire week in between the times I am in the classroom. Memories aren't as fresh and it requires a lot of review that takes up even more time. This challenge could be minimized, I think, if action research becomes a component of final internship when we are in a classroom full time.

Working within the mentor teacher's schedule was another challenge in my role as an intern. Since it is not my own classroom and I am a pre-service teacher, establishing my role within the classroom was a challenge. I didn't want to impose on my mentor teacher or 'take over' her class; instead, I strived to work with her so that I

became a part of her class. Last semester, I felt like an aid; this semester, I felt like a teacher. I believe that it was because I had a mentor teacher who allowed me the freedom to interact with the children and lead them in discussions and activities more often than just the assigned lessons, that I was truly allowed to grow as a teacher and empowered to carry out my action research. Given that I was fortunate to have Mrs. Holly who was very flexible and encouraging this semester, orienting the mentor teachers, especially those who are not familiar with action research, could be beneficial.

Lastly, going through this continuous communication and writing process with Dr. Han has been incredibly helpful. I believe sharing our reflections with one another could benefit us even more, and thus I think a virtual space could be created to post action research so that pre-service teachers can learn from one another's mistakes and grow from not only their own practice, but those of their peers.

A Teacher Educator's Reflection

Reflecting on Ellie's lesson, I am struck by how much I have learned by working with her. Most importantly, I realized the importance of setting high expectations. One of the reasons I was reluctant to officially introduce action research in the course was that I wasn't sure if the pre-service teachers were ready for this. While I often teach pre-service teachers to expect the highest when they teach young children, I clearly wasn't practicing what I preached. As I continuously communicated with Ellie throughout her action research, I said to myself "What a disservice I would have done, had I not encouraged her to take this additional step!" I believe with this opportunity, Ellie is on the right track to become a teacher researcher even as a pre-service teacher.

At the same time, this experience has invigorated my experience and role as a teacher educator and university supervisor. There is no question that Ellie is one of the strongest pre-service teachers in my class and she also had one of the best mentor teachers during this internship, which enabled her to make this attempt for action research. She did, however, point out the challenges she encountered through this journey. The research literatures, in fact, support many of the difficulties Ellie brought up, lack of time being the first and foremost challenge (Smith & Sela, 2005). Additionally, given that pre-service teachers are at a transitional period where they have dual identities of being a student in a college classroom and a teacher in an internship classroom, adding a researcher role could be a seemingly unreachable stage for many pre-service teachers (Crocco, Faithful, & Schwartz, 2003; Goodnough, 2003; Price, 2001; Trent, 2010). Reflecting on Ellie's success factors, challenges, as well as ideas of implementing action research, I feel it is my mission as a teacher educator to reconceptualize early field experiences.

A Teacher Educator's Concluding Thoughts

This article reinforces a few current issues of teacher education. One of the loudest stories heard from the pre-service teacher, who implemented a fairly successful first action research project, is the importance of having a mentor teacher who is in support of this endeavor. This suggests that mentor teachers and schools where our pre-service teachers are being placed significantly impact the overall success of pre-service teachers' action research. This undergirds the recent conversation of educational reform that more intentional field experiences with partnership efforts and teacher professional development on collaborative inquiry is immensely needed (Castle, 2012; Dana & Yendol-Silva, 2009; NCATE, 2010; Zeichner, 2010). In order for pre-service teacher action research to have a solid stance in the teacher education program, teacher educators from the college need to work in collaboration with the partner schools and mentor teachers so that both entities can guide pre-service teachers with the shared rationale, framework, and emphasize its necessity.

When pre-service teachers are in the field, they typically have assignments from the college courses to complete. Some, although not all, assignments like the one described above already have very similar foundations to action research.

While the term 'research' may be daunting for some pre-service teachers, the practical nature of action research provides an opportunity for pre-service teachers to learn first-hand about examining their own practices (Gitlin et al., 1999; Price, 2001). Similarly, while there may be some challenges with time and power as a pre-service teacher, the fact that they are still college students with the support of an institution and the faculty benefits them while being introduced with action research (Smith & Sela, 2005). Even from a young child's perspective, they benefit and deserve to be taught by teachers, including pre-service teachers, who are looking for answers and motivated to make changes (Castle, 2012). Taken altogether, adopting an action research framework rather than giving prescriptive assignments, either in conjunction with the project approach or something else, not only could be a great tool for pre-service teachers to transform from a student to a teacher role during early field internship, but would also be a lot more meaningful for young children's learning experiences.

Last but not the least, this article sheds light on an un-tapped territory of pre-service teacher action research. There are few research reports on pre-service teachers' action research, and when pre-service teachers are involved in any type of action research, it was usually the teacher educator who uses it as data for their teacher research and thus, it is usually a teacher educator speaking on behalf of pre-service teachers' learning and/or reflection (i.e., Kitchen & Steven, 2008; Moran, 2007; Smith & Sela, 2005). This article, however, is aimed to portray a pre-service teacher's action research experience as the centerpiece, while the teacher educator's role and reflection is supporting the entire endeavor of the pre-service teacher. As can be found, the pre-service teacher had valuable insights to suggest based on the challenges she experienced which is sorely needed. It is worthwhile to note, though, that writing this article in two different voices with the pre-service teacher at the forefront was a lot harder than we originally thought. It may represent the traditional nature of writing to be done mostly by a teacher educator, but we are excited for our attempts to make a small change.

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