

Kimberley Thoresen
Elementary Science Curriculum and Instruction
And Science Methods Practicum
Final Reflection
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Although I have learned a lot of helpful teaching techniques throughout this semester, I do not feel like my overall teaching philosophy has changed drastically. At the beginning of the semester I was apprehensive about teaching an elementary class. I had never taught a science lesson to a class of elementary students before this course, but as the semester comes to a close I now feel adequately prepared to work with a classroom of students on science activities. Throughout the semester I was exposed to a variety of strategies to use in the classroom. I have also had the opportunity to practice instructing a classroom of students with my small group activity, learning cycle lesson plan, and science circus.

During my practicum experience I taught my learning cycle lesson plan and science circus activities to two different classes. My learning cycle lesson plan which was focused on plant life was used in Mrs. Kindley's first grade classroom. I began the lesson by asking open ended questions to understand the students' previous experience with plants. A few students raised their hands to share that they had gone over the diagram of a plant with my cooperating teacher. They also shared stories of activities involving plants from kindergarten. Continuing with my questions, I asked the students what they saw in a bag and the words "seeds" echoed in the room. I asked the class to tell me what a seed was, and Taylor raised his hand to say that a seed is the beginning of a plant and it holds a tiny plant inside. I asked if a seed served any other function and one of the students called out "it has food in it". While I held the bag of seeds some of the students sitting in the front reached to touch the seeds, so I passed it around so everyone could take a look at the bag. In the future I think I would bring a small bag to pass around so they could all see the seeds during the opening discussion, and my timing would not be delayed for passing out small cups of seeds to each student. I asked two of the students to help pass out laminated place mats for sorting the seeds on and the cups of seeds. Once each of the students had their supplies they headed to their seats to start observing and sorting their seeds.

As the class worked at their seats some of the students came to me to ask what seed they had in their hand or if they in fact were holding a seed. One student thought that a gourd seed was a piece of a stick. In order to allow the students to have more ownership on what they were seeing and finding in their cups of seeds, I laid out the seed packets with samples of the seeds taped onto the front. The students were able to identify the seeds. Students classified their seeds in a variety of ways including by size, shape, color, and specific plant type. Once the class finished sorting their seeds I asked students to tell me some of their observations. During this

time the students stayed at their seats with their seeds, and some of the students were a bit talkative and did not pay attention to their classmates who were talking. I think that in the future I would have the class come back together to talk about their findings and observations that way the students would not be distracted by their seeds.

In addition to the activity on sorting seeds, I also had the students examine the inside of a seed. After the students put their seeds back into their cups, I passed out two pre-soaked lima beans to each student. The class seemed to enjoy this activity, but some of the students had trouble working the bean open without breaking off the beginning of the plant from the seed leaves. This frustrated some of the students, so it was good that I had brought extra beans for them to use. After we broke open the beans, I asked the students to tell me what they saw. Some students told me that the seed had a jacket (seed coat); others told me that they saw the plant inside, and others mentioned how fragile their bean was. I drew a diagram on the whiteboard to show the students what the bean embryo looked like and then we reviewed what a seed was and the parts of a seed.

Many of the students wanted to take the seeds and beans home with them, but Mrs. Kindley did not want them to take the supplies home. I had extra lima beans, but she thought some of the students would eat them, so none of them could take anything with them to show their parents. After reviewing the activity, the students asked if they should clean up and quickly cleared their places and packed up to go home.

Based on the Burry Stock Science Classroom Observation Rubric I think that my activity was well planned and carried out. The students were engaged and responsible for their own learning with the investigation. They gave me examples of similarities and differences they saw in the seeds and were able to give a definition for the seed. As far as understanding the concepts, the activity was centered on the idea of classifying and arranging seeds based on physical attributes, and all of the students were able to do so. During the activity I used a variety of teaching methods including discussions, questions, experiments, and demonstrations to help students understand the topic.

One of my mistakes in the activity could have been trying to cram in too many activities. Both of the seed activities I did could have been single day lessons, but I wanted to follow the learning cycle plan I did in EDUC 406 so I did both topics. In the future I think I would rather focus more time on each of the activities, rather than doing both in one sitting. I would

incorporate a graphing activity for the seed classifications and a make your own seed coloring activity for the lima bean dissections.

The day after my lesson plan activity, I completed the science circus on electricity. Our science circus centered on electricity and provided the students with six different activities, two activities focused on static electricity, one focused on magnetism, and three focused on using circuits. Our teaching team met at Chris's classroom at 1pm to set up while the students were out at recess. I rented a camera and tripod from the Media Center in Swem to use during the circus. We rearranged the desks into clusters and set out supplies for each station. When the class returned from recess Chris introduced the Science Circus, and we split the students into groups. It seemed like most of the introductory comments were dominated by Chris. In the future, I would make sure to share some of the introduction statements with him. During the introduction, I taped the class. Then I set up the camera on the tripod until the class got into their groups, but did not press the record button to continue taping the lesson. We caught the mistake later in the lesson and were able to capture a lot of the circus stations on video. In the future, I think I would ask a parent volunteer to videotape to ensure that each of the student teachers had equal time in front of the camera. I would also plan to split up discussion amongst the three group members to give each person experience talking in front of the fourth grade class. During the circus, I helped the students by encouraging them to read through the different instructions before touching materials. After they read the directions I guided them into the activity by asking them what the instructions wanted them to do with the supplies. I also asked them observational questions and had them speculate the outcome for activities involving different materials. The students seemed really engaged in all of the activities. One major change I would make would be to include the direction of returning each station to the condition they found it in before moving on to the next one, to ensure that each student started with a clean area.

Overall the science circus ran really well. We had parent and faculty volunteers at a couple of the stations. We also spaced ourselves around the room to help facilitate the activities. After the students went through the six centers, they helped clean up by returning all the supplies to the bags in the front of the room. Then we went through a debriefing discussion in which Chris and I reviewed some of the observations they made during the centers. Their discussion allowed us to assess understandings of the activities, and also gave us information of which centers worked well and which did not.

Although the science circus went rather well, it required a lot of adult assistance which may not be feasible for all classroom situations. Similar to my initial vision and philosophy for teaching science, I will implement science lessons that focus on the learning cycle, small investigations, and questioning. Based on the information from the curriculum course, I will attempt to engage students in scientific inquiry by providing them with hands on experiments and cooperative learning opportunities. Whether the lesson begins with a story or question, I will encourage my students to ask more questions about the science topic and explore the world around them. I will give students opportunities to answer questions by ensuring they have adequate wait time between my question and my response to their ideas. Through the practicum experience I have seen young students become intimidated during class participation, so I will try to create a friendly and receptive environment. In this way the students will feel comfortable sharing their thoughts and as an instructor I will feel confident in asking them open ended questions. I will also ensure that students have freedom to carry out scientific investigations. They will have opportunities to do individual, small group, and class-wide activities. I will also engage my students in questioning the world that surrounds them and allow them to experience new and exciting activities in the classroom. I will also implement the four question strategy in lessons, so that each student will learn to ask questions, create investigations, formulate hypotheses, and make observations. Although the activities we do will be guided by standards of learning, I know that I have the creativity abilities to engage students and allow them to truly expand their knowledge of science. My students will develop their scientific inquiry skills and create memories about science lessons and field trips that surpass the memories that I have from my elementary years.