Paula Lobaccaro

Ethnography, Field Trip #2

**Game Plan:**

We are going to use Sand Art as a way of interacting with the kids. We plan on bringing in an empty, clear, bottle for each of the kids to experiment in. We will also bring in multiple different colors of salt for the Sand Art. Prior to the trip, we will color white salt using various different amounts of food coloring to try and get a wide variety of salt colors for the kids to work with.

When we are at the school we will approach each group with a different set of directions. Some examples of our ideas are:

1. Create whatever you want
2. Can you mix a certain color given the color choices?
3. Can you fill the bottle with 1/3 of this color, ½ of this color and 1/6 of this color?
4. Can you work together to fill one bottle?

**Hypothesis:**

I think this will be a very fun project for the kids to get a little bit messy with. Salt is easy to clean up, and won’t cause a huge mess, but it allows the kids to express some of their creativity. I think the groups we tell to do whatever they want will get really into it and thoroughly enjoy the activity. I can foresee some resistance with the math approach, however. The students might not want to bring math into something that’s supposed to be fun. I think the girls will enjoy this more than the boys will, which is where the idea of color mixing came into play. In order to mix colors the bottles will need to be shook quite vigorously, and I think the boys will like this more than simply adding colors to certain heights within the bottle.

**Reaction Analysis:**

As was anticipated, the kids had a lot of fun with this activity. They were eager to get started and often did not wait to hear directions before touching everything on the table. We set out different colors of salt in individual cups and gave the kids each a bottle, a spoon and a funnel.

The first group was told to freestyle. They all immediately jumped up out of their chairs and started looking at the different colors that were laid out on the table. They each took a color and started scooping it into their funnels. No arguments over colors occurred; in fact, all of the students were quite polite and if someone else was using a color they wanted, they waited patiently until they were finished. This was very surprising to me, I was expecting fights to break out over certain popular colors and for students to tell one another to hurry up so that they could use a certain color. Instead, everyone said please and thank you when appropriate; I was very impressed with this fact. In the first group most of the kids ended up with bottles full of a dark purple-blue color because they all shook their bottles after adding layers of each color of sand. They found, as a group, that blue seemed to be an overly dominant color and then began trying to adjust the color of the mixture by adding lighter colors. When I asked a few of the kids what color they were trying to make, they weren’t sure. They didn’t know what adding two colors together would create, but one little girl, who I would suspect to be African American, told me that adding white to the mixture would make it lighter, and that’s what she wanted to do. There was also another girl who was mixing her own colors on the side in an empty cup before adding them to her bottle. It was interesting to see that some of the kids knew a little bit about color theory, but others had no idea and were blindly mixing colors (which seemed to always result in a blue mixture).

When we got our second group of students we told them to each mark their bottle in tenths; that is, draw lines to separate the bottle into ten sections. This was a difficult task for some of the children, they all seemed to understand the concept of “tenths” but translating that onto the bottle proved quite difficult. Another barrier was the bottles themselves; the bottles had a rounded area at the top and the bottom and a smooth cylindrical section in the middle. A few of the kids seemed to only see the middle section as the part they needed to divide up, and thus had two much larger layers at the top and bottom. Initially there was some conversation about how far apart to place the lines on the bottle, starting from the bottom and working their way up. One student started marking his bottle and ended up with only 7 sections because he had spaced his out too far. His friend sitting next to him saw this and thus made his sections a little bit smaller so that he could fit all 10. Another boy started marking from the bottom and worked his way up, but he did not count the section as he drew them, and he ended up with about 15 lines on his bottle by the time he got to the top. He counted and realized this was incorrect, but instead of getting frustrated, he simply turned the bottle around and tried again on the other side. This time he made the sections a little smaller and only because I prompted him to count as he went did he achieve the correct number of lines. It did not seem to occur to him to count as he went, even though that is what I had expected them to do. Once all of the students had marked their bottles, they began scooping sand into the bottles through their funnels. They then found that it was very hard to accurately measure the correct amount of sand, and many of them ended up passing the designated lines they had drawn. Since we didn’t make a huge deal about the bottles needing to be accurate, the kids did not get upset but instead let their creativity lead them in many different directions.

The third group we had we asked to work in pairs. We had four kids split into two groups and each create two bottles (so that each child still had a bottle to bring home). One of the groups immediately dove into scooping sand into their first bottle, but the other group waited and discussed their plan of action first. This second group spent about 5 minutes bickering over how they were going to proceed and ended up deciding that each would do their bottle how they wanted. Essentially, this group decided to do what we had asked the first group to do, and simply freestyle, but stayed within the parameters given by doing one bottle at a time instead of both at the same time. I was glad to see that they followed our directions, but was a little disappointed in the lack of cooperation between the two. Once child seemed to be much more overbearing than the other, and coincidentally this was because he had a clear image in his head of how he wanted his bottle to turn out. This child, who I would assume to be of Irish descent, was the only student to plan out his artwork before he started. He picked his 4 favorite colors and proceeded to layer them in a pattern all the way to the top, saving a 5th (his favorite) for last to top it all off. He was very proud of his creation, but had been quite rude to his partner along the way, being very demanding about what he wanted, often saying “I’ll just do it myself.” The other group, however, were very excited to work together to create two bottles that they were both happy with. They told us that they didn’t think it would be hard to do this task with someone they weren’t friends with, but in my opinion, they thought this way because they were friends and did get along so well. The two groups showed a stark contrast in ability to collaborate on a project.

The last group we had was only 2 girls because the other two had to leave class for a few minutes. The two girls that had to leave approached the teacher beforehand and told him that they were upset they were going to have to miss the Sand Art activity, so we planned to stay a bit after so that they could make their own bottle to take home. I was happy to see that these two girls had heard enough positive things about the activity from the other children to be upset if they did not get to participate. The two girls that did stay were very quiet and we let them freestyle like we did with the first group. This time, however, we joined them, each creating a bottle of our own. After having watched three groups of students perform this task, I had many ideas of how I wanted my bottle to turn out. I quickly realized, however, that this was much harder than I had initially anticipated. It was very difficult to be able to be accurate when adding different colors of sand, and was much harder to keep the area clean than I had realized. Ellie, Pat and I all ended up with bottles that we were not completely satisfied with, only Cary was able to create what she had envisioned. I think it was important for us to join the activity so that we could experience what we had laid out for the students. The two girls that were in the last group with us thought it was funny that we were having so much trouble, and they showed us some of the techniques they were using to fill their bottles.

The overall activity was a lot of fun for all of us, and it gave us an idea of how much students know about fractions and color theory. We plan to move forward with this same idea, and create a similar virtual world where we can use Sand Art and color mixing to help teach fractions.