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Studio V

Assignment 8

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Ethnographic Description 3 – Device-Assisted Learning

On the first of November, the PDI Studio V class from Rensselaer Polytechnic Institute visited the Ark Community Charter School to test out prototypes of educational devices with the students. This was my group’s third visit to the fifth grade class. The main objective of the first visit was to better understand the backgrounds and needs of the students. The main objective of the second visit was to gain feedback about the initial ideas the PDI students had pertaining to their proposed educational devices. The third visit focused on play-testing early prototypes of educational devices, which were designed using the feedback gained during the first and second visits. My group created an iPad app game that teaches the parts of speech by categorizing words from popular song lyrics. Before visiting the school, I hypothesized that the children who have a thorough understanding of the parts of speech would attempt to win the game fairly, and the children who do not understand the parts of speech would attempt to cheat before attempting to learn. This hypothesis turned out to be true, and it will largely affect future iterations of our app.

We received positive feedback from the first group who play-tested the app. It was a group of all males. We first introduced ourselves and asked the students if they remembered what we presented to them last time. The first group of students, as well as all of the following groups, said statements along the lines of, “Yea, you brought those magnets with the song lyrics! You taught us adjectives and verbs and that stuff!” Some of the students even remembered that “adjectives and verbs and that stuff” were called the “parts of speech.” The discussion did not last very long because the students were distracted by the iPads in our hands. When we told them that we turned our magnet game into an app game, they immediately expressed interest in playing. Not wasting any time, we divided the students up into two teams, each with two to three students. Each team had one iPad, and they played the game as a collaborative effort.

Our instructions to the students were very vague, which was intentional because we wanted to see if the game was intuitive enough that they could figure out how to play it on their own. We told each group, “Drag and drop the lyrics onto the parts of speech they belong to. Here is a cheat sheet to help you out.” The cheat sheet explained what each part of speech meant, so if a student had any doubts about what category a particular word belonged to, he or she could figure it out without asking for help.

One team from the first group of boys immediately started using the cheat sheet to help them win the game, and the other team lost the game several times before they even thought to use it. The team who did refer it played very slowly because they would refer to the sheet for any word they were unsure about. However, it appeared that they already had a working knowledge of the parts of speech. They won the game after just a couple tries. The other team would repeatedly lose the game in about 10-20 seconds because they utilized a rapid-fire “guess and check” method, in which they would drap and drop words into random categories until they found the right categories. They even tried to write down the correct answers until we intervened and told them cheating is not allowed.

When the “guess and check” boys noticed that the other team not only understood the parts of speech, but was winning the game, they became upset. One of the boys, of perceived Hispanic descent, reached over and started hitting the other team’s screen to make them lose. This started a playful but competitive fight between the two teams, who both immediately began trying to make the other team lose. The teacher saw this going on and told the boys, “Behave now, and stop cheating!” After that, the “guess and check” group started using the cheat sheet, and eventually beat the game. The level of excitement in the first group was extremely high, to the point where it seemed the game caused an adrenaline rush that made the boys forget proper classroom behavior. This group presented us with three important findings. One is that we need to somehow make the cheat sheet more appealing so the kids will resort to learning the parts of speech before they resort to cheating or sabotage of the other team. The second finding is that we need to add more variety to the game to make memorizing the correct answers an unrealistic option. The third finding is that the kids were very excited about the game. We need to find a way to better harness that excitement and turn it into a motivation to learn instead of a motivation to simply “beat the game.”

Our next group consisted of both girls and boys. The boys behaved similarly to the “guess and check” boys from the group before. However, the girls had a drastically different approach to the game. One girl, of perceived Middle-eastern descent, appeared to already understand the different parts of speech. She was in a group of three girls and immediately took the leader role. She found the correct answers before the other two girls even had a chance to participate. When she beat the game, she played it again, and again, and again, until she announced that she was bored because she already beat it several times. I suggested the idea of letting the other two girls play the game instead, which she agreed to. The next girl who took the iPad, who I would guess to be African American, struggled to get the right answers even though she witnessed the first girl playing it. She quickly learned that the “guess and check” method made her lose every time, so she resorted to the cheat sheet to figure it out. She began asking me if she was right before actually dragging and dropping the words. Instead of telling her yes or no, I would ask her why she thought what she thought, and we would reason out the correct answer together. The first girl would sometimes give away the correct answer, but I would not let anyone touch the screen until they told me their reasoning behind what answer they were about to choose. This method was effective, but we need to find a way to introduce this style of learning within the game without needing a physical mentor nearby.

Meanwhile, the boys in that group started looking at the girls’ screen to find the right answers. We encouraged them to use the cheat sheet. At first, they were frustrated, but after they started winning, they bragged to the girls about how good they were at the game. When leaving the table, one boy of perceived Hispanic descent said, “Man, that game was fun!”

The next group was also co-ed, and one team consisted of one girl, who I would guess to be of African American descent, and one boy, who appears to be Caucasian. The boy immediately took over the game using the “guess and check” method. The girl became angry at him because she saw that his method was not working, but he was continuing to use it anyway. She was upset that they were losing every time, so she took the iPad from him and started playing the game. However, the boy continued to drag words to random categories while she was playing, continuing their losing streak. The girl proposed that they take turns, alternating between every word. That appeared to be working at first, but the boy became excited that they were about to win and dragged the few remaining words into the incorrect categories, losing the game. After this point, I intervened to prevent the boy from continuing this behavior. By the end of my session with them, they had won the game a couple times, but could not win it consistently. This indicated that they relied more on memorizing the correct answers than understanding why the correct answers were correct. In future iterations of this game, we will focus on implementing pop-up hints or mandatory learning sessions that encourage the students to think before they act.

Some of the feedback we learned from the students pertained to the user interface. For example, the “restart” button was too small, so the students would hit it several times before successfully restarting the game. Furthermore, the “You lose” screen was displayed for too long, prompting the students to touch different places on the screen in an attempt to get back to the game. One of the biggest sources of confusion came from the fact that when the students beat the game, there was nothing to indicate they won. We will likely fix this by adding exciting and victorious graphics and sounds after the game is won. We also plan to add several levels with different songs of varying difficulty. This will address several issues. First of all, the students grew tired of playing the same exact game over and over again. Additionally, the added variety will prevent the students from memorizing the correct answers. Lastly, multiple levels will make the game more appealing to the students who already excel at the parts of speech.

One topic that my team discussed at length before visiting the school was the ease of accessibility the kids have to app devices. We asked every group how many of them had iOS devices at home, such as an iPad, iPhone, or iPod Touch. In some groups, every single student had access to one or more of those devices. In other groups, there were no more than one or two students who did not have an iOS device at home. However, they all had at least one friend with one. While we recognize that iOS devices can be extremely expensive and difficult to obtain for some families, my team decided that creating an iOS app was preferable over creating a physical learning tool. Our reasoning is that a physical learning tool would cost money to every student who wanted to own it, but our app would be free to everyone who already has access to an iOS device. Thus, every one of these students would be able to play our game without spending a penny on it. Furthermore, the teacher agreed with us that, “It won’t be long until you find these little things in every classroom.” App devices are already a large part of the students’ lives, so our goal is to leverage their interests in app games by finding a way to incorporate learning into their idea of “fun.”

My hypothesis that children who have a thorough understanding of the parts of speech would attempt to win the game fairly, and the children who do not understand the parts of speech would attempt to cheat before attempting to learn, proved true. There was a strong tendency for the female students to play the game fairly, and a strong tendency for the male students to cheat by using the “guess and check” method. Accordingly, the female students tended to start the game already having a working knowledge of the parts of speech, whereas the male students typically could not distinguish one part of speech from another. Further research should be done to diagnose the source of this learning discrepancy.