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Reflection

Our group project in the Education Commons aimed to design and build an interactive 3D-printed model to serve the purpose of bringing some sort of data to life. Our group was named Interactivity 1, so we went in with the intention of having the class actively interact with our model in some way, somehow.

On the first day of the project, we were introduced to various technologies that were suggested to help us achieve our goals. First, Mr. Tex demonstrated how a Makey Makey tool could serve as a video game joystick by having us play a round of *Mario Bros* as an icebreaker. Using wires that connect to the computer and aluminum foil as an energy conductor, my fellow groupmates and I were able to play by tapping our wires to the aluminum foil. You can see what the technology tool looks like in the picture drive at the bottom of this file. Next, Mr. Tex encouraged us to use the 3D printing machine available to all University of Pennsylvania students at the Education Commons. He demonstrated how to use the software Tinkercad to build any model we liked on the computer and then 3D print it to bring our vision to life. This particularly fascinated our whole group. Tex showed us everything from 3D-printed shoe slides to a 3D-printed guitar, which inspired us to have our model 3D-printed. Lastly, Tex showed us how to employ NFC tags in our project through an application called NFC Tools. This tag essentially has a chip in it that is Bluetooth discoverable and could link a phone to any resource someone might want.

After being exposed to various technologies that were accessible to us, our group had two overarching goals throughout the project. First, we had to figure out a way to use the various

technologies we were introduced to in order to display data from the *Eastern Echo* at Eastern State Penitentiary. All semester, we had been digging through archival records of Eastern State Penitentiary, primarily focusing on newspaper articles written by inmates and published in the *Eastern Echo*. Various recurring topics appear in these articles, such as religion, labor, sports, and community. One of my groupmates, Youbin, expressed that he had performed research on how the Eastern State Baseball League impacted the community among inmates at Eastern State and noted that there was a lot of data related to baseball recorded in the archives. Therefore, we deliberated and decided to make our project based on baseball data. We thought it would be a great idea to show the team standings of baseball teams in the ESP Baseball League in a 3D histogram, considering that the data was presented in the *Eastern Echo* as a chart. Allowing our audience to visualize the chart more effectively would enable viewers and readers of the *Eastern Echo* to gain a better understanding of how each team was performing in relation to the others. Tim, my group's fabricator, used Tinkercad to create our design, including five different teams and how many wins they had five games into the season. I will describe my role in the decision-making process after I completely explain how our project came to life.

The next goal our group had was to make our project interactive and fun. We already knew that visualizing the data was not going to be hard since we had access to a 3D printer; however, it took a lot of extra thought to figure out how the data would be interactive. The only two technologies we had not incorporated in our project yet were the Makey Makey and the NFC tags, so we focused on putting those technologies to use. Our strategy of having an open table, where everyone spoke and shared their opinions without any shame or timidness, was very effective because, in the end, we were able to combine all our thoughts to produce one exceptional model. As a group, we decided to place an NFC tag on the bottom of our model to

link viewers to the team standings of the ESP Baseball League teams throughout the season. Looking to the future was very important to us because we thought that showing a team's success at one point early in the season was not sufficient. Therefore, we believed it would be effective if viewers could track teams' progress throughout the season, allowing them to interact with our model by scanning the QR code. Additionally, we used the Makey Makey to have viewers simulate future ESP games by playing a baseball video game since the data in the *Eastern Echo* included future games to be played at the bottom of the article we chose. By having volunteers come up and simulate a future game, viewers were able to interact further with our data, hopefully making them more invested in tracking the success of ESP baseball teams in the future.

Throughout the project-making process, I was the documentarian, meaning I was responsible for taking notes in all our meetings as well as capturing pictures throughout the design process. Doing my job allowed all members to stay on the same page at all times, even if we were not together, because I documented every idea and expectation that was mentioned. This ensured that no member could forget what we had discussed or what they were responsible for doing. However, my contributions were not limited to taking notes and pictures. Since our group had an open table policy, I shared my thoughts and opinions throughout the design process, contributing heavily to the idea of using the NFC tag to provide viewers with a better understanding of team performance through an interactive experience.

In all, our group worked hard, and our open table system minimized problems throughout the process. Everyone contributed, which allowed us to fabricate a great, educational, interactive model.