Herman and Kate Kaiser Library (HKK) Service Area Schools:

Public Elementary, Charter, and Private

Project Link (Anyone with a link can view)

In September 2017 I changed positions in the Tulsa City-County Library from being a Children's Associate at Martin Regional Library to being the new Youth Librarian at the Herman and Kate Kaiser (HKK) Library. As I have settled into the new location and responsibilities, I have researched and explored the service area around HKK at 51st and Hudson. This visualization project has been an opportunity to experiment with the data I have encountered while using the tools and knowledge I have gained over the semester.

As I thought about this project, I had many conversations with Kat LeFevre where we talked about different ideas of what to visualize for this project. Her manager Rebecca Howard suggested looking at local school data for a branch profile and passed that idea along to me as well. I loved this idea as it seemed a good fit for my ongoing research of my service area.

My main focus for this project is the schools that are my responsibility to connect with as HKK Youth Librarian according to TCCL. The children who attend these schools are part of my primary audience alongside the 0-5 age range (as HKK has a Teen Associate who focuses on public junior high and high school students). In my experience so far at HKK, I have seen that the 0-5 age range and their parents and caregivers are well-supported by the programming already in place, such as Storytime and play workshops. However, the school age crowd did not seem to be a focus of the previous HKK Youth Librarian and I need to explore new avenues. Learning more about this cohort by analyzing and visualizing student demographics may give me insight into the group, especially how to reach them for the Summer Reading Program.

My Schools

- Tulsa Public Schools: Carnegie Elementary, Grimes Elementary, Key Elementary, Salk Elementary (all PK-6th)
- Charter: Discovery School of Tulsa (K-8th)
- Private: Miss Helen's Private School (PK-5th), Peace Academy (K-12)

Acquiring recent data about TPS schools was simple. TPS has school profiles for all of its schools which provide data from October 2016, which I felt was recent enough for my purposes. I do not have concerns about the accuracy of data from the Tulsa Public Schools individual school profiles.

The charter and private school information was more difficult to find as they do not display any of this kind of information on their school websites. In my research for this project, I discovered the website "StartClass" which purported to contain up-to-date information about schools demographics. I followed their data sources and discovered the National Center for Education Statistics (NCES) and found data for DST and Peace Academy for the 2014-2015 school year. While StartClass had data populated in their page about Miss Helen's, none of the source links displayed this data. Multiple searches in NCES did not bring up any data for this school, so I do not feel comfortable including the data from StartClass. Further online research brought me to Tulsa People magazine's 2017 school guide (published February 2017), which listed Miss Helen's enrollment as provided by the school, which I will use. This guide also gave me an updated school-provided enrollment number for Peace Academy. I will continue to use the TPS-provided data for the four public schools because it is more recent (October 1, 2016). All data but that from DST will be from the 2016-2017 school year. All data sources are linked in the Rows tab of the visualization.

As I considered what tools to use to create visualizations with the data collected, I knew I would need to start out simply. Creating large visualizations with big data and large spreadsheets is beyond my current scope of ability. I enjoy looking at smaller pieces and seeing what bigger picture they might show. I also have focused on solely web-based tools this semester because I work primarily from a Google Chromebook which does not allow for downloads of programs like Tableau or Circos.

I played with data in Plot.ly, RAWGRAPHS.IO, and Chartblocks. I almost discontinued use of Chartblocks when I realized they only privatize inputted information on paid accounts; however, all of the data I am using for this project is freely available online and I am simply rearranging it. I would not use Chartblocks for anything private. I came up with some interesting visualizations but was not satisfied with how the visualizations from different programs looked when placed together. I also was unsure of what story I was telling from the visualizations I was collecting. How would what I had created help me understand anything about my service area student population?

For further inspiration, I returned to the list of tools offered in Viz Tool 4 to see what else I could experiment with. Enter Google Fusion Tables: I tried a tutorial with sample data so that I could see how it worked and how I would need to set up my own data to work with the tool (figuring how to set up the data in a spreadsheet is one of my biggest challenges). I liked the table that was created from the sample data and thought I could do something similar with my data. After I saw the Map and Card features I knew I had found the tool answer for this project.

Through more tutorials, trial and error, and time in Google Sheets and Fusion Tables (including a lot of time in the "help" section, I created a visualization I am proud of: "HKK

Service Area Schools: Public Elementary, Charter, and Private." I put together a spreadsheet that fit the needs of the program and allowed me to display data in ways I wanted. I experimented with the functionalities of the tool to see what could be done and discovered many of the program's limitations. For example, Google Fusion Tables does not sync to Google Sheets, so any changes in the original Sheet or the table do not match, which was difficult when I had new ideas to add. I was disappointed to see that Fusion Tables seems like a project that Google has left by the wayside, as it seems to have many capabilities yet many quirks due to the lack of upkeep. However, the time I spent experimenting in this program taught me more about how to work with data which will help in using future tools.

One quirk or bug that gave me trouble I could not resolve is the way Fusion Tables chooses to display numbers in different parts of the program. For example, for data to display as percentages in the Cards function, it must be entered in decimal places and marked as "percentages." However, when putting that same data marked the same way into the Chart function, it displays as decimals. From searching the Help forum, I discovered this is just a quirk of the system that has not been corrected and the only workaround is to enter that data in twice to the Sheet and filter what is needed to make charts. Perhaps this challenge (and other issues) will be fixed in the future: more likely is that I will eventually migrate the data to a different platform.

I have a rudimentary knowledge of simple HTML, thanks to playing the now mostly-defunct online game Neopets in the early 2000s as a young tween and experimenting with Codecademy as an adult attempting to learn code. I cannot create code from scratch, but I can modify simple existing code, such as the HTML behind the Custom Card presented in the

Google Fusion Tables sample project about butterflies. I wanted to see if I could read the code and adapt it for my data: after tinkering for a short time, comparing the HTML to the existing sample, and getting error messages when trying to save my altered code to my project, I was able to create my own Custom Card. Success in these admittedly small areas gave me confidence that I can tackle more complex projects in the future, given more learning and experimenting.

This visualization is a project I consider to be one to build on. It is "finished" for the purposes of this project, but I see potential in the ways I can add to this information in the future. I do not have grand conclusions to draw on from the data as collected so far, but I plan to add updated school data as it becomes available to see how the area changes. I also hope to add data related to library programming as I continue in the position to see if I can make any interesting comparisons or find fresh insights. Even on the due date of this project, I received data about the 2017 TCCL Summer Reading Program directly related to the student participation levels at my schools that I want to explore further in relation to the data I gathered for this visualization. Given endless time to tinker, there are many ways I could continue to add to this visualization. I also may take the data I have gathered to a different platform if I discover one that better suits what I am trying to display, especially as I consider adding more proprietary data from TCCL.

Overall, what most captured me in this course was learning how to critique visualizations and learn from them. Learning how to create visualizations, though, showed me how much work goes into creating good and effective visualizations. This work has given me new respect for those well-crafted visualizations I see online and for the minds who see the world through a data visualization lense. I look forward to seeing how I can use these lessons in my work and to learning more about the data visualization world as it continues to evolve.

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LIS 5673

Introduction to Information Visualization Final Project