Michele Carlin

DACSS-604_Fall2024_Final Project Check-In Assignment #1
Due 11:59 p.m. EST Sunday, Oct 27

Select an existing project that you plan to revise and improve in this course as the final project.

For my final project, I have decided to revisit the final project I submitted in my DACSS-601 class and move it into an interactive dashboard.

https://dacss.github.io/601_Spring_2023/posts/MicheleCarlin_FinalProject.html

There is a link in the top right-hand corner of the above project that contains the coding that I used to complete this project.

Find a model data-driven story or article that you really like and you want to imitate and learn from.

I found the following sample dashboards that I plan to use pieces of as a model for the new dashboard I will be creating.

The first dashboard shows how I would like to include filters/slicers on the left navigation panel, along with 3 graphs.

The second dashboard is similar in that is contains filters in the left navigation panel, but it also show the various tabs along the top that I am planning to use.

Brief proposal of my DACSS-604 final project.

The topic and the research question:
I work at UMass Chan Medical School and in the third year of the medical students' medical education curriculum, the students complete seven different clerkships/rotations throughout the academic year, one in each of the following areas: Family Medicine (FC), Medicine (ME), Neurology (NU), ObGyn (OB), Pediatrics (PE), Psychiatry (PS), and Surgery (SU). Within each clerkship, students are assessed in a variety of ways: Student Performance Evaluations (SPEs), Objective Structured Clinical Examinations (OSCEs), and National Board of Medical Examiners (NBME) exams. Scores from these three grading components are used to calculate their final clerkship grades.

Research questions that we look to answer on an annual basis:

1. Is the distribution of final letter grades similar from year to year?
2. Within each clerkship are component scores comparable across gender and ethnic groups. Our ethnicity categories are based on those used by the Integrated Postsecondary Education Data System (IPEDS), to mirror the data we submit on an annual basis to this national organization.
3. Multiple locations are needed to accommodate the number of students enrolled in each clerkship; therefore, we are also interested in examining the data at the location level to determine if students are performing similarly regardless of what location they are assigned to. Answering this question will assist in responding to the medical school's accrediting body's (Liaison Committee on Medical Education (LCME)) mandate that student experiences across various locations within the same clerkship should be similar.

Your targeted audience:
The targeted audience for this dashboard includes the clerkship directors and administrators, as well as other academic leaders within the medical school as it helps to inform them of any areas that may need attention. For example, when looking at grading component scores by location they can see if students are more (or less) prepared for OSCEs and/or NBME exams based on the location they were at. In addition, they would be able to see if physicians at certain locations are stricter (or more lenient) with their grading on SPEs than other locations which would outline where more faculty development may be needed. Reviewing gender and ethnicity data helps to ensure we are meeting the diversity and inclusion policies of the medical school.

What format your final product is going to be: a poster, a policy brief or paper, a journal article, or a website or online platform (interactive):
In my current position we are starting to move many static reports/graphs to interactive dashboards, therefore for this project I will be moving the information presented in my DACSS-601 final projective into an interactive dashboard.

Draft an outline of your final project writings: you can just include the title of the paragraph. More importantly, you should highlight how this revised outline similar or different from your original writings, and why do you plan to reorganize the outline, deleting or adding new sections:
My DACSS-601 final project included all of the steps (including the code chunks) that I used to initially create a graph followed by the step-by-step revisions I worked through to clean it up, (e.g., re-ordering the bars in a clustered bar graph, changing from counts to percents, etc.). For this dashboard, I will review the final graphs I created in 601 and update as needed based on Bertin's visual variable principles for the types of variables I am graphing (e.g., letter grades=ordinal, numeric scores=continuous). I will also use Miller's principles when updating the text on the graphs (e.g., axis labels (especially how I represent academic years), legends, titles, etc.). Based on our discussion during our 1-on-1 meeting, I also plan to change how I stratify the graphs; instead of by gender and ethnicity, I will stratify by grading component so

that I can see how the different genders and ethnicities perform on each of the grading components.

In addition to removing code chunks and draft versions of graphs, I will also summarize the writing into smaller ‘notes’ sections to include on each page that briefly explains each component.

A plan for visualization and tables in the final writing: a brief description about what information you plan to present with visualizations and tables, think about the potential types of graphs and tables you can use.

The format of the dashboard that I am planning to use is one that has various tabs across the top that will allow the user to click through the various grading types. For example, one tab each for SPE, OSCE, NBME, and Final Clerkship Grades. Each of those tabs will contain the following graphs (at this time, I'm thinking box plots): average scores by location, average scores by gender, and average scores by ethnicity, and then as mentioned above, a short 'notes' section giving a brief description of each component. Each of the grading components pages/tabs will have two filters on the left-hand side of the visualization that will allow users to filter by clerkship and academic year. A fifth tab will contain trended graphs (across the three academic years) to look for consistency from year to year. I am hoping to be able to have two filters on this tab, one to filter by clerkship and the second to filter between showing the percent in each letter grade category (clustered bar chart) and the average score (box plots). If this isn't possible, then I will consider creating two separate pages for this information.

(Optional) A plan for describing and explaining methods: again, this part depends on what your targeted audience and format of the project.

I plan to include a technical notes tab that will contain some of the recoding that was done for this project. For example, some of the clerkship grading component scores are on a 4-point scale and others are on a 0-100% scale, therefore I will outline the recoding I did to convert them all to the same scale. In addition, some of the location names contain specific wards/clinics within a hospital while others include only the main hospital name, so I will explain how I recoded location names to the main hospital name.