Performance Assessment: DATA DASHBOARD AND STORYTELLING

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D210 – Data Dashboard and Storytelling

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Part 1: Interactive Data Dashboard

A. Provide a copy of your interactive Tableau dashboard to support executive decision-making. Your dashboard must be accessible to users with colorblindness, and must include the components in each of the following bullet points:

Using the medical dataset provided by WGU, I have compiled data from the CDC dataset titled "Weekly United States COVID-19 Cases and Deaths by State." This dataset is ideal for exploring potential factors contributing to COVID-19-related deaths. The dashboard includes both selected datasets, four different representations to display trends, two interactive controls, and two key performance indicators (KPIs).

1. Provide both data sets that serve as the data source for the dashboard.

The two datasets I used are "medical_clean" from WGU and "CDC_Dataset" from the CDC. Both are included in the folder provided with the upload.

2. Provide step-by-step instructions to guide users through the dashboard installation.

Steps to access the dashboard:

1. No installation is necessary; simply ensure you have access to a web browser.
2. Click on this link to access the publicly available dashboard.

   Link (Click Here)

3. Provide instructions to help users navigate the dashboard.

Steps to navigate the dashboard:

1. Opening the Dashboard: Ensure you have access to a web browser and click on the provided link to open the dashboard.

2. Interacting with the Dashboard:
    - COVID-19 Deaths by State and Year: Use the dropdown menu below the “Deaths by Year” section or select the desired year from the “Deaths by Year” bar chart. This will adjust the map to display COVID-19 death data for different states in the “Deaths by State” section.
    - Doctor Visits by State: In the ‘Doc Visits by Population’ section, click on one of the population bars in the bar chart. This will filter the chart to show only the selected bin, and the U.S. map will update to reflect the count of doctor visits by population. Hover over state circles to view the average doctor visits and total population sum for each state.

3. Exploring Data Representations:
    - Charts and Graphs: Hover over any chart or graph to see detailed data points.
    - Legends: Use the legends next to each visualization to understand the color coding and categories.

4. Navigating Between Views:

- Tabs: If there are multiple tabs on the top, click on each tab to switch between different views and data representations.

5. Interacting with KPIs:
    - Metrics Display: Review the key performance indicators (KPIs) displayed at the top of the dashboard for quick insights.
    - Detailed View: Click on any KPI tab for a more detailed breakdown of the data.

6. Exporting and Sharing Data:
    - Download Options: Use the download button (usually in the upper-right corner) to export data visualizations or reports as needed.
    - Share dashboard: Adjacent to the download button, you'll find a three-circle arrow symbol. Click on it to copy the link, use the letter icon for emailing, and share via Twitter or Facebook.

7. Help and Support:
    - Tooltips: Hover over question marks or information icons for additional guidance and explanations.
    - Contact Support: Scroll down to the bottom of the page, where you will find a header labeled "Contact Us" on the right side. Click there to receive assistance with Tableau.

Part 2: Storytelling with Data

B. Provide a link to a Panopto multimedia presentation in which you tell a story about the data to an audience of data analytics peers. Your presentation should implement elements of effective storytelling and include each of the following elements:

The video is online and is located here on this link:

GabrielaHowell_D210_DATA_DASHBOARD_AND_STORYTELLING

Part 3: Reflection Paper

C. Write a reflection paper to demonstrate your understanding of data representation and reporting by doing the following:

1. Explain how the purpose and function of your dashboard align with the needs outlined in the data dictionary associated with your chosen data set.

The purpose of this dashboard is to track and display COVID-19 deaths across the United States by state and doctor visits by population in each state. This aligns with the needs outlined in the data dictionary by providing clear, actionable insights into public health metrics, which are critical for a medical facility. The dashboard's functionality helps executives monitor key health indicators, ensuring they can make data-driven decisions during health crises.

2. Explain how the variables in the additional data set enhance the insights that can be drawn from the data set you chose from the provided options.

The count of doctor visit data alongside COVID-19 deaths delivers a comprehensive view of the healthcare landscape. By analyzing doctor visits per population, we can identify correlations between healthcare accessibility and COVID-19 outcomes. This additional data set enhances the insights by showing probable regions where healthcare organization might need strengthening to better handle such pandemics.

3. Explain two different data representations from your dashboard and how executive leaders can use them to support decision-making.

Doctor Visits by Population Bar Chart: This bar chart, segmented by population bins of 10,000, allows executives to quickly distinguish which population groups are accessing healthcare services. This helps in identifying underserved populations and planning resource allocation accordingly.

COVID-19 Deaths by State Map: This map uses varying shades of gray to represent the number of COVID-19 deaths, providing a visual representation of the pandemic's impact across states. Darker shades indicate higher death counts, enabling executives to identify hotspots and prioritize these areas for intervention and support.

4. Explain two interactive controls in your dashboard and how each enables the user to modify the presentation of the data.

Year Selection Pie Chart Interaction: Selecting a year from the Deaths by Year bar chart updates the pie chart on the map to display data for that specific year. This helps users compare annual trends and identify particularly severe years.

Population Bin Click Interaction: Clicking on a specific population bin in the bar chart updates the map to show average doctor visits for states with that population size. This interactivity allows users to drill down into specific demographics and understand healthcare access disparities.

5. Describe how you built your dashboard to be accessible for individuals with colorblindness.

The dashboard was designed with colorblind accessibility in mind by using high-contrast colors and varying shades of gray for the maps. These choices ensure that color differences are perceivable regardless of color vision deficiencies. Additionally, all charts include text labels and tooltips for clarity, making the data accessible to all users, including those with color blindness (Datylon).

6. Explain how two data representations in your presentation support the story you wanted to tell.

Deaths by Year Bar Chart: This chart illustrates the trend of COVID-19 deaths over time, highlighting years with significant spikes. It supports the narrative of how the pandemic evolved and its varying intensity across different periods.

Deaths by State Map: By showing state-wise death counts, this map underscores the geographic disparities in the pandemic's impact, supporting the narrative that some areas were more affected than others and may require different levels of response and support.

7. Explain how you used audience analysis to adapt the message in your presentation.

The presentation was adapted for healthcare executives who need concise, actionable data. Complex data was diluted into simple, clear visuals, and interactive elements were included to allow executives to explore the data relevant to their specific needs and responsibilities. The focus is on understanding the impact of the COVID-19 pandemic on different regions of the United States and analyzing doctor visits to provide insights into healthcare resource allocation and policy development.

8. Describe how you designed your presentation for universal access by all audiences.

The presentation was designed for universal access by using simple language, clear and large fonts, and ensuring compatibility with screen readers. Interactive elements were designed to be accessible via mouse navigation, and alternative text was provided for all visual elements. In addition, the presentation was uploaded to Tableau Public, making it accessible to all audiences.

9. Explain two elements of effective storytelling that you implemented in your presentation and how each element was intended to engage the audience.

Clarity and Focus: The dashboard maintains a clear focus on key metrics (COVID-19 deaths and doctor visits) and avoids clutter, ensuring the audience can easily understand the presented information (Knaflic, 2016).

Engagement through Interactivity: Interactive elements like clickable charts and maps engage the audience, allowing them to explore the data in a hands-on manner. This interaction assists in maintaining interest and allows for a deeper understanding of the data.

These elements were intended to make the presentation both useful and engaging, ensuring that executives can swiftly understand and act on the critical health metrics presented.

D. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

Centers for Disease Control and Prevention. (n.d.-b). *Weekly United States covid-19 cases and deaths by state - archived*. Centers for Disease Control and Prevention. https://data.cdc.gov/Case-Surveillance/Weekly-United-States-COVID-19-Cases-and-Deaths-by-/pwn4-m3yp/about_data

Knaflic, C. N. (2016). *Storytelling with data: A Data Visualization Guide for Business Professionals*. John Wiley & Sons, Inc.

The best charts for color blind viewers: Blog. Datylon. (n.d.-b). https://www.datylon.com/blog/data-visualization-for-colorblind-readers