Evaluating the Impact of Learning Cues for Explanatory Storytelling

Basic Worksheet:

1. **Limited use of data visualization (terminology)**
    - "Most of the visualization is to familiarize the audience with the story. The data presented is simple and has a message."
    - "They highlighted the active year and made the other years faded to draw attention to the current year."
    - "Showing an image to compare the height of El Capitan and a person to emphasize how tall and big the El Capitan is."

2. **Top-level thinking about different aspects of data visualization**
    - "Geo Visualization to play with hurricane and see different outcomes."
    - "Story is based on a change vs. time visualization."
    - "The type of chart selected to show a specific kind of data."

3. **Difficulty implementing scrolling/interaction**
    - "The central aspect of scrolling."
    - "The scale for the scroll, the auto scroller."
    - "Scrolling and moving in the horizontal direction instead of vertical."

4. **Difficulty implementing animation**
    - "Combining simulation, story, sound, animation in one screen."
    - "The charts animating itself onto the screen."
    - "Literally all of the animations and their implementations."

5. **Detailed observations from a data visualization aspect**
    - "Timing the transitions correctly, the right aspect ratio, and the rest of the website."
    - "Many of the charts did not have axis labels, grid lines, or titles. Instead, shapes, images, and annotations were used to convey the data to the user."
    - "Good data-to-ink ratio, use of color, and hover animations."

Learning Cues Worksheet:

1. **Identification of at least one emotional response**
    - Sympathy/Empathy
    - Distaste/Frustration about the topic
    - Call to action
    - Information/Enlightening the audience
    - Questioning beliefs and behavior
    - Users find themselves in the data

2. **Observations on aspect ratio**
    - "Slope graph is not spiral on mobile device."
    - "The mobile version changes the template a little, only problem would be the legend."
    - "In mobile version, the geomapping must be shown above and the bar chart below for coordinated view."
    - "The charts go out of screen when on mobile and is funky."

3. **Detailed observations on how interaction could be improved**
    - "Filtering and brushing can improve the user experience."
    - "A tooltip; ability to highlight/filter/brush based on month and lodging."
    - "Tooltips, hover, magnification, zoom, ability to sort and filter."

4. **More observations from a data aspect using learning cue prompts**
    - "Quantitative, time series, multidimensional, geographical data used in the story."
    - "GPS Location data showing traffic snapshots, before and after COVID video footage."
    - "Discrete data, binned or categorical."
    - "Radial data, only 2 discrete variables showing saturated fats and how fried the item is."

5. **Observation of colors/labels/legends in visualizations**
    - "I wish they had a color/opacity legend for the dots in the strip plots."
    - "The color scale is not appropriate. Color is rarely used as a scale throughout the story. It is mainly used for aesthetic purposes."
    - "Colors are semantically resonant."
    - "Labels are too cluttered."

6. **Additional observations through learning cues**
    - "Including audio for the sounds section could improve the user experience."

- "Data-to-ink ratio is not the best."
- "I liked the pacing and continuity of the story."
- "Additional feature to enhance - click for more information."

7. **Ability to critique the dataset/story through learning cues**
    - "Search Cat questions tab visualization is hard to see all at once - maybe instead of hover, use selecting."
    - "The area of the canvas should be bigger."
    - "Hover was minimalistic, brushing would have looked better."
    - "The vis looks good but maybe change the geo vis to show satellite data?"
    - "No titles, axes, grid lines, etc."
    - "Show actual figures, how many stores in total? Data from how many stores, pacing is good, shows few cities but can show more."