Reflective Essay

Prachi Shivam Parashar

Muma College of Business, University of South Florida

ISM 6419 Data Visualization

Dr. Han Reichgelt

July 18, 2024

Section A: Data Visualization Tools and Techniques

When talking about reflecting on the course objectives and the related module learning outcomes, I am confident that I have successfully acquired the skills and knowledge intended by these goals. Throughout the course, I have learned to perform detailed analyses and create compelling data visualizations, with a particular focus on examples involving cars which we used in an all module. This has allowed me to understand how to select the specific graphs for different types of data. I can now explain important factors for effective data storytelling and describe relevant data sets for various projects.

Moreover, I have gained proficiency in creating data visualizations using several tools, including Power BI, Qlik, Google Looker Studio, Python, and R. With the use of them I learned to make interactive and animated visualizations, how to create calculated fields and I also learned to design dashboards and generating maps. I combine different graphs into a single visualization, use parameters effectively, and apply filtering to enhance the clarity and impact of the visualizations.

In addition, the discuss of the challenges of data visualization, particularly regarding visual impairment, ensuring that my visualizations are accessible to a broader audience. Preparing data appropriately for visualization has become a crucial skill, enabling me to ensure that the data is clean and well-structured before visualizing it. Overall, these skills have significantly enhanced my ability to utilize data-driven decision-making and making me a valuable asset.

If I talk about the reflection of the tools and techniques which I learned in this course, I am confident they will be highly beneficial in my current and future career. The ability to create insightful and accurate data visualizations using all the tools is crucial for any data-driven role. These skills will enable me to effectively communicate complex data, support data-driven decision-making, and enhance my analytical capabilities.

Finally, the course material was excellent at teaching important skills in data visualization. The structured exercises in module provided clear, step-by-step guidance, which is important for building foundational knowledge and confidence. You allowed exercise and module open which gave enough flexibility to explore topics in a manner that suits individual learning styles. These exercises gradually built skills in using tools like Tableau, Power BI, and Python, providing a good mix of guidance and flexibility.

Particularly final project, which required the application of all learned concepts to a real-world data set. This enhanced practical understanding and allowed us for creative and independent application of skills. The flexibility to select a topic of personal interest for the project made the learning process enjoyable and engaging, fostering a deeper dive into the subject.

Overall, the course material offered a strong and balanced learning experience. The mix of structured exercises and open-ended projects helped us thoroughly learn and apply skills, supporting effective data-driven decision-making. Immediate feedback from exercises corrected mistakes and deepened understanding, making it easier to remember by engaging different learning styles.

Section B: Course Assessment

In my view the mix of assessment instruments used in this course, including group discussions, mini-projects, and an in-depth project, was appropriate and effective for evaluating my understanding and application of data visualization principles. This diverse approach not only encouraged active participation and collaboration but also allowed us to engage in hands-on, practical exercises, which are essential in a subject focused on practical skills.

Weekly quizzes could have provided additional checkpoints for understanding, the existing mix successfully fostered a deeper engagement with the material and practical application of skills, aligning well with the course objectives. Furthermore, the in-depth project offered an opportunity to demonstrate comprehensive understanding and proficiency in using visualization tools I learned in the class. Moreover, group discussions encourage collaborative learning, allowing students to share insights and critique on each other's ideas, and develop a deeper understanding of the subject matter through diverse perspectives.

On the other hand, I strongly recommend that you should include a quiz with every module. According to a study by Van Brocklin (2020), frequent quizzes significantly improve students' academic performance Also, I think having quizzes every week helps students get more involved and connected with what they're learning. While avoiding frequent quizzes might reduce stress, creating a more relaxed learning atmosphere but it also makes it harder to identify and address learning gaps promptly. This can result in a weaker grasp of the material over time

Section C: Overall Course Design

Overall, the course provides a comprehensive overview of the data visualization, which incorporates both readings and lectures. Each module ends with a quiz/exercise, which helped me to use tools like Tableau, Power BI, Python, and R to make my own visualizations. This practical part is great for learning how to make high-quality visuals. The course also includes mini projects, such as creating visualizations for weekly quizzes, as well as discussions and essays and these activities are great for reinforcing what students have learned and applying it practically.

The idea where we can submit early drafts of their projects and report, and you provide feedback is really helpful. It allows us to see what they need to improve. Also, the discussion part is one of my favourites because we can share our thoughts and learn about different perspectives on the same topic. Moreover, class discussions provide a framework for students to think critically—out loud—about topics being covered in class. They also provide an opportunity to gauge how well your students are comprehending course concepts, assignments, and outside readings. (Kruse, 2022)

However, the course tries to cover too many tools in a short time, which might make it hard for some people to fully learn each one. To improve this, the course could add more specific sessions focusing on the most important tools. Also, to make the data visualization course better, you could add more guest talks video of industry experts. For example, Dr. Wilson's video in the module 2 was impressive where he illustrated the complex data easily with the help of data visualization. In my experience, such resources have been invaluable in helping me understand industry trends. Overall, this course has significantly enriched my data

visualization skills and knowledge, covering a wide range of tools and techniques essential for any data-driven role.

Reference:

Van Brocklin, P. (2020, September 17). Study shows quizzes improve academic performance - LAS News. LAS News. https://news.las.iastate.edu/2020/09/17/study-shows-quizzes-improve-academic-performance/

Kruse, S. (2022, April 13). Leading class discussions. The Institute for Learning and Teaching. https://tilt.colostate.edu/leading-class-discussions/