

## Capstone Reflection – Andrew Grzybowski

Over the course of this semester, the American Battlefield Trust capstone project challenged me to grow not only as a researcher but also as a collaborator and future professional. Early on, I underestimated how critical the foundation we laid with the team contract, background research, and planning documents would be. Looking back, those early deliverables weren't just boxes to check; they set the tone for how we communicated, divided responsibilities, and adapted as the project evolved.

One of the most lasting lessons came from our initial plan to use a Sankey diagram to map user pathways. At the time, it seemed like the best way to show how users navigated the site, and I was genuinely excited about the potential of producing something so visually and analytically rich. I was honestly disappointed when we realized that Google Analytics didn't provide detailed enough flow data to support it. Letting go of that idea wasn't easy, but it became a real turning point. I learned that knowing when to pivot and doing so without letting ego or sunk cost bias interfere, is a professional skill I'll carry forward. We moved instead toward segmenting Chrome OS usage, referral sources like ChatGPT, and retention patterns. That decision ultimately resulted in a final product that was more accurate, actionable, and aligned with our client's needs.

Personally, I took on the role of project manager, which was very much within my comfort zone. I enjoy taking initiative and organizing tasks, so I felt confident stepping into a leadership role. However, one challenge I faced was adjusting to differences in working pace, especially when team members took longer than I was comfortable with to complete certain tasks. It was a learning moment in patience and communication. I had to remind myself that everyone has different workflows and that mutual respect is key to team dynamics. If I were to do it again, I'd set up a more structured timeline earlier in the semester. Even with informal coordination, having clearly defined check-in points and deadlines for major deliverables would have helped maintain momentum and reduced uncertainty.

Something I'm particularly proud of is the analysis we did around Chrome OS usage as a proxy for student engagement. The original idea was brought up by Noah, likely based on a suggestion from our professor, and as soon as he mentioned it, I saw the potential. Rather than dismissing it or focusing only on ideas I had come up with myself, I embraced it fully and helped turn it into one of the most impactful parts of our project. Since Chromebooks are widely used in K-12 education, identifying Chrome OS sessions gave us a meaningful way to infer student traffic without needing direct demographic data. If I were in a job interview, I'd highlight this experience not just for the analytical insight, but as an example of staying open to great ideas no matter where they originate and turning them into something actionable.

Roadblocks were inevitable. The most significant one was the Sankey diagram, which we had to abandon after realizing the user flow data in Google Analytics wasn't detailed enough to support it. While disappointing, this challenge taught me the value of adaptability. Instead of forcing an incomplete or low-quality output, we shifted our focus to more reliable insights like Chrome OS engagement patterns, referral source trends, and city-level comparisons. It reinforced the importance of being resourceful. When ideal conditions aren't available, creativity and a willingness to pivot are just as important as precision.

One question I still have is how to meaningfully connect different types of observations into a more unified understanding of user behavior. For example, we identified interesting patterns in Chrome OS usage, seasonal traffic spikes, and referral trends from platforms like ChatGPT and ClassVR. However, tying those threads together into a complete picture of how students engage with the site was difficult. I'm interested in learning more about frameworks or tools that help link fragmented insights like device usage, traffic source, and session depth into a cohesive narrative that explains not just what users are doing, but why they're doing it.

While our project didn't directly relate to UMD or Prince George's County in a geographic or institutional sense, it still felt meaningful on a broader level. The work we did with the American Battlefield Trust applied to national education trends, particularly in how students interact with online historical content. Our focus on student engagement, referral sources like ChatGPT, and Chrome OS usage speaks to challenges that educational nonprofits across the country are facing. So while the project wasn't tied to a local context, it still gave me insight into how digital tools can support public learning at scale.

Had we done this project through another school or with clients in a different state or country, I think many of the same themes, like digital engagement, user retention, and data-driven design, would still apply. However, the specific content, user behavior patterns, and cultural references might have differed depending on the region. That said, I don't think UMD itself had much influence on the direction or outcome of our project. Our analysis focused on broad user data from across the U.S., and in many cases, global patterns. The tools, insights, and findings we developed were applicable well beyond our university context. This reinforced for me that effective digital analysis depends more on understanding your audience than where you're working from.

Looking ahead, I feel more confident working with clients, analyzing complex data under constraints, and adapting quickly when things don't go as planned. One area of growth that stood out to me was learning to step into a position of authority. It was uncomfortable at first to offer suggestions to a real organization on what they should do to improve. I didn't want to overstep or seem like I was assuming too much. However, once we had solid data to back up our insights, I felt more confident framing our recommendations in a way that was constructive and grounded. That shift, from offering opinions to delivering evidence-based guidance, was a meaningful part of my professional development. At the same time, I know I still need to strengthen my ability to guide group momentum proactively rather than reactively. That's something I plan to work on in future roles.