[Column – Grand Challenges in Assessment]

Making a Grand Contribution: From Insights to Impact with Data Visualization

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The Grand Challenges for Assessment in Higher Education project is a collaborative effort of ten endorsing organizations and over 400 volunteers to increase the extent to which assessment (1) supports equity; (2) is visible, actionable, and drives innovation; and (3) guides rapid improvements in pedagogy (Singer-Freeman and Robinson 2020). Several implementation teams were created to carry out this work, including the Data Visualization Team, which was tasked with creating and disseminating data visualization and data story resources and increasing the use of data visualizations and data storytelling.

Data visualization refers to the "visual representation of statistical and other types of numeric and non-numeric data through the use of static or interactive pictures and graphics" (Gatto 2015, p. 5). A closely related concept, data storytelling is the "ability to effectively communicate insights from a dataset using narratives and visualizations … [in ways that can] put data insights into context for and inspire action from your audience" (Cote 2021). Effective data visualization and storytelling can communicate findings quickly so that stakeholders can focus on implementation strategies rather than understanding the data. With greater engagement and understanding of assessment data, stakeholders are more likely to use the findings to guide resource allocations and decisions.

While data visualization and data storytelling sound good in practice, assessment professionals in higher education are often underprepared and lack the skills, expertise, and time required to create and share effective data visualizations or dashboards with their stakeholders. Traditionally, data visualization skills have not been included in graduate education programs related to assessment, evaluation, and research, leaving today's assessment professionals to learn these skills independently.

As an early step in advancing the use of data visualizations and dashboards in campus decision-making processes, the Data Visualization Team initiated an ongoing survey of higher education assessment professionals in 2022 to more clearly understand their data visualization challenges and professional development and resource needs. Thus far, results from 383 survey respondents indicate that the most pressing data visualization challenges include (1) lack of staffing or time to meet the demand, (2) lack of relevant skills, and (3) limited financial resources. Findings also indicate that professional development needs are high, particularly relating to (1) creating interactive visualizations using specific tools, (2) creating interactive dashboards, (3) matching visualizations to specific types of data, and (4) creating visualizations for different audiences or presentation needs. Explore the survey results dashboard for additional insights: http://tinyurl.com/datavizdashboard. With these findings in mind, the Grand Challenges Data Visualization Team is now creating a data visualization and storytelling toolkit, preparing informational and how-to presentations, workshops, and articles, and planning a webinar, "Employing Data Visualization to Guide Innovation" for August 28, 2024. Be on the lookout for more details coming soon.

While these plans are in the works, you might be wondering, "What can I do right now?" You may encounter numerous requests for data visualizations from campus leaders and others across your institution. Your campus president might inform you that senior leadership requires data visualizations of current reports to make decisions about future initiatives and priorities. Do you have a data visualization strategy? Here are a few steps to consider:

Determine Questions to Address. To maximize the usability of the data visualizations you create, it is essential to understand your stakeholders' questions. What questions about your institution will the data help them comprehend? Are the questions best answered with a report? If stakeholders wish to interact with the data, an interactive data visualization dashboard allowing filtering for specific data categories may be beneficial.

Create a Plan. Before creating a data visualization, it is crucial to develop a plan or storyboard that outlines the expected content. It is useful to share a draft of your plan with stakeholders for feedback.

Identify the Story in the Data. Ensure the information in the visualization is easy to interpret without requiring additional context. Present the data in a way that tells a story by bringing together results, using both text and images, as well as context. For example, a dashboard displaying a program's enrollment combined with graphs for retention and graduation rates over time can help a user understand the program's overall health from start to finish. Also, make sure any reported findings align with stakeholder questions and are actionable; otherwise, the visualization will be disregarded.

Review for Accuracy and Appropriateness. Verify that the data you share is not sensitive or identifiable and explain any potential missing data so that users can understand the limitations when reviewing the findings. You may also need to determine which data suppression rules to apply to prevent data reidentification.

Conclusion

Implementing these steps can initiate a valuable conversation on your campus about the institution's data visualization needs, who can provide the necessary skill sets, and how data visualizations can be leveraged to assist leadership in data-informed decision-making. By providing these simple suggestions for getting started with data visualization, this manuscript answers the call of the Grand Challenges in Assessment to make assessment findings visible and actionable to drive innovation (Singer-Freeman and Robinson 2020).

Learn more about the Grand Challenges in Assessment and ways you can participate by visiting our website: https://sites.google.com/wfu.edu/grandchallengesinassessment.

Share your perspectives and needs related to data visualization by completing our survey: http://tinyurl.com/GCdatavizsurvey.

References

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