Communication and Data Science

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The Challenge:

The potential of data is not being realized given struggles to effectively communicate data across organizations and audiences. This challenge can be addressed by transforming data into visually engaging and meaningful stories that can drive understanding, collaboration, and informed decision-making

Communications + Data Science = Better Understanding

Overview:

- This study investigates the relationship between enrollment in PCA courses and majors in Mathematics, Statistics, and Computer Science at St. Lawrence
- I utilized data from the Registrar's' office to uncover patterns in course selection among students in quantitative departments
- My study seeks to reveal the potential connection between Communication skills and data analysis
- This research focuses on the need for interdisciplinary skills in the field of Data Science, emphasizing the importance of effective communication skills combined with quantitative skills

Background:

- This semester I completed an Independent Study with Professor Rife in the PCA department
- I completed an online class from Duke University: Data Visualization and Communication with Tableau
- I paired that with related scholarly articles to help explore the connection between rhetoric and data visualization
- It taught me best practices for effectively communicating data insights into meaningful and engaging visualizations and stories that are easier for audiences to understand and act on

What are SLU Students Doing in this Area?

The work I completed during my Independent Study made me curious if St. Lawrence students with quantitative majors are seeing the need for communication skills— are students seeing the possibilities of this combination and the abundance of skills it could provide them with?

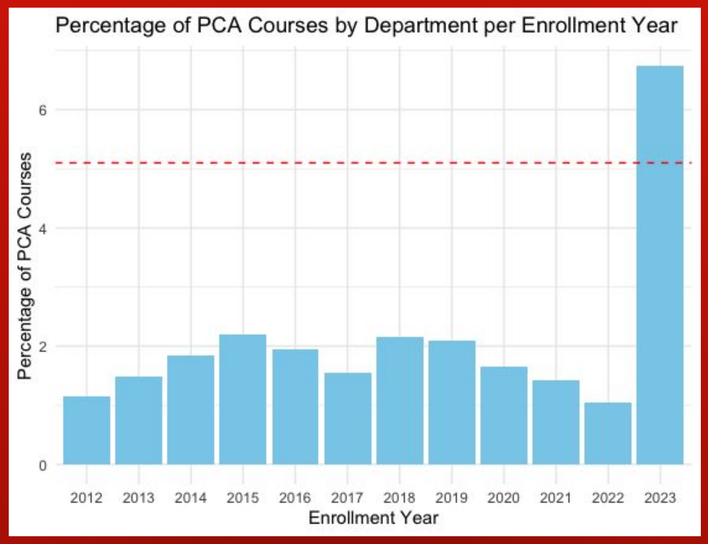
Method:

I analyzed a dataset provided by the Registrar's office. This data included:

- All students who graduated between August 2015 and May 2023
- With a major and minor in:
    - Math
    - Computer Science
    - Data Science
    - Statistics
    - Econ-Math Combined
    - Environmental Studies-Math Combined
- All courses >0 units that students earned towards graduation
- Graduation year

Results:

- Over the span of nine years there were only three Math, Statistics or Computer Science majors that double majored in PCA
- Over the span of nine years there was only three Math, Statistics, or Computer Science majors that minored in PCA
- The most common major/minor combination with Math, Statistics, and Computer Science majors is Economics
- However, there is a significant rise in PCA courses taken by quantitative majors in 2023 — tripling from the previous years



This plot shows the large surge in PCA courses being taken by Math, Statistics, and Computer Science majors in 2023.

The average amount of PCA courses taken by ALL students over the nine years is 5.1%. Math, Statistics, and Computer Science majors have fallen well under this average.

Out of the 13,186 total courses completed by Math, Statistics, and Computer Science majors over the span of 9 years only 1.82% of those courses are in the PCA department.

Future Work:

- Is the increase in quantitative majors taking PCA courses a continuing trend? Are they starting to recognize the benefits of this combination of skills?
- Each department has their own strengths they bring to the data visualization and storytelling process. Collaborating across majors/departments could help create broader understanding of data and more impactful realization of data