Task 2: Storytelling Report

Analise Burko & Marcos delaTorre

Our Message

Our storyboard will illustrate a dynamic breakdown of the state of the current college-major system, including how students interact with it and how those choices impact their employability and overall economic success long-term. The primary audience this storyboard will aid is decision makers within a university setting, those faculty and contributors who hold power to incite change and restructure the college-major system to promote student success and equity across universities. Secondarily, this storyboard will target students who are contemplating which major to pursue in their own academic journeys. By painting a full-picture of all the majors available to them in terms of university demographics and also long term impacts, students will be empowered in their decision-making processes.

Our goals: to convey major categories and individual majors in terms of demographics, popularity, employability (represented by type, and also full versus part-time employment), future economic success effectively, with comparisons at the undergraduate and graduate level. The storyboard will concisely and effectively communicate said information to provide insights to drive decisions by our audience.

User goals: to gain a comprehensive understanding of the college-major system to help guide future decisions

> **Main audience:** to find key insights to drive the promotional, financial, and equity efforts within the given university
>
> **Secondary audience:** to find a best-suited major for the given individual in terms of the provided fields of information
>
> Some questions that will be addressed are:
>
> - Which majors are the most economically advantageous after undergraduate school? Graduate school?
> - Are there differences between male and female students regarding major choice? Which majors need further efforts to promote more balanced demographics?
> - Which majors and major categories are more likely to result in a job requiring a college degree? Full-time or part-time employment?
> - Does economic viability correlate with major popularity?

- How do the trends change from undergraduate to graduate school?

Example Users

User 1: This user delegates funding for the University of Nonexistent, she needs to justify the distribution of the budget to the school board. For instance, factors such as higher popularity and increased economic success both warrant increases in funding.

User 2: This user is interested in creating programs to improve majors that are currently in-need. He wants to know which majors and major-categories are more susceptible to gender imbalances for targeted equity programs. He is also interested in which majors have lower rates of employment to address curriculum improvements.

User 3: This user is struggling to choose her college major and cannot decide between a major in arts or business. She is interested in pursuing graduate school but would also like economic security after graduation. She will use the storyboard to compare the two major-categories for each of these factors so she can make a well-informed decision.

Pilot Users

Name: V.G.

Age: 39

Associate professor of Computer Science at Universitat Oberta de Catalunya

We asked V. to browse the dashboard and let us know if he could obtain any interesting insight or ideas for action, from his point of view as a university professor and also from the point of view of his department.

Some insight he mentioned:

- Initially surprised that the unemployment rate is very low for graduates in all major categories. However, when looking at the split by type of employment (requiring vs. not requiring college) it is not that surprising, also considering that the data is for the U.S.
- The differences between majors are not as dramatic as expected, probably because this is for recent graduates, and the added value of junior professionals is not that high in the short term. The difference is expected to be larger for more experienced workers.

- The income in Biology and Life Sciences is lower than expected
- There is probably a considerable difference between the salaries across regions, mainly East and West coasts vs. rest of the U.S., therefore sometimes the median income may be misleading.

Some actions he proposes based on the data:

- In general, majors with a strong mathematical base have more and better employment opportunities. It would make sense to allocate more resources to the teaching of math in pre-university years.
- As it is known, the rate of female students in Mathematics and Computer Science is low. The same happens with the rate of female teaching staff. Initiatives to balance this rate would be very positive.

Pilot User 2

Name: Brandon

Age: 21

Studies: Physics, 3rd year undergraduate

Profile: Brandon will graduate with a Physics degree and is considering pursuing graduate school and wants to utilize our storyboard to assist in his decision to either begin working or choose an appropriate major for graduate school. He values his likelihood to be employed over prospective income, and is also interested in which majors have the highest student-satisfaction. He is looking for answers to the following questions:

- How likely am I to find a job in my field after I graduate?
- Which physical science majors are most popular in graduate school?
- Will my employability/income level increase significantly if I get a graduate degree?
- Which graduate major makes the most sense given my physics background?

Commentary on dashboard

- Found the stacked-bar chart difficult to interpret, especially because it is not sorted
- Had a hard time understanding legend labels

Corporate Design Guidelines

We will assume this presentation is commissioned by the University of Barcelona. Therefore we will be using its logo and corporate colors.

Besides, we have chosen the font pairing "Kollektif / Gidole" from the design suggestions in:
https://www.canva.com/learn/the-ultimate-guide-to-font-pairing/

- Color scheme
- Fonts
    - Primary: Kollektif
    - Secondary: Gidole
- Background image/logos

Decisions and Implementation

Our final storyboard tells the story of the message outlined previously in a way that engages the audience while following a logical flow of progression. The beginning of the story starts broad so to explain context to the audience and get them invested into the rest of the presentation. Since the presentation is directed toward students, we frame our introduction to our secondary audience, introducing the idea that our presentation will help lead them to a better understanding of their college experience and even better job opportunities.

After explaining the origins and makeup of our dataset, we dive into the bulk of our visualizations. The progression of visualizations shifts from broad demographics toward economics in an iterative manner. We start off with pure demographic information showing category popularity, from there we compare demographic features with income before moving to pure income by category plots. This succession of visualizations is chosen to draw a clear path between each of the points presented, resulting in a more cohesive story.

Next, our presentation takes an unexpected turn and introduces a new and pivotal concept, the factor of graduate school. By not mentioning the additional grouping before in the presentation we surprise our audience and peak engagement in the middle of our presentation. We then present the information that we just reviewed in a new way against the graduate counterparts. This opens up another facet of possibility for our audience and changes the trends and dialogue about the data that was already discussed, creating a more dynamic and engaging presentation for our audience to

interact with. We end the presentation reflecting on what types of supplementary data would tell a more comprehensive story of the ideas presented, qualifying our storyboard with appropriate limitations.

In its entirety, the visualizations used in our storyboard were chosen to be diverse as to present the available information in an interesting way without having to compromise legibility and interpretability. A treemap, pie charts, circle/stacked/bar charts, scatter plots, and a violin plot are all used to present our data in a way that is fresh to the audience as they progress. While the plots are for the most part all varied, they remain tied together through an identical color scheme and formatting .

Team Member Contributions

Our team worked well together and found it simple to make equivalent contributions to each component of the storytelling project. We each found one pilot user, took on visualizations, and created corresponding slides for our section of the storyboard.