A UX Approach to Data Visualizations and Navigation

UCOP Tableau User Group
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Project background

UCLA Graduate Division

• ~13,000 graduate students; ~900 postdocs
• ~55 staff members
• Decentralized IT and IR teams
Roll out first public dashboards

- First set of dashboards published
  - Admissions
  - Enrollment
- Second set of dashboards published
  - TTD/Completions
  - Postdocs
  - Doctoral Career Outcomes

Coalition for Next Generation Life Science (NGLS) data website: https://nglscoalition.org/coalition-data/
Countless resources exist to guide us in designing dashboards that are understandable, but how do we know if people are interacting with our dashboards in the way we intended?

Let’s find out with a User Experience (UX) approach
Introduction to UX
What is UX?

UX is not:

“We want you to make this dashboard look pretty.”
“User experience encompasses all aspects of the end-user’s interaction with the company, its services, and its products.”

Don Norman and Jakob Nielsen of the Nielsen Norman Group
In other words:

A UX team wants to make everything your organization does easy to use.

(including dashboards!)
UX in practice

- Customer Needs
- Constraints
- Organizational Goals

UX
How UX approaches a project

General problem

Specific problem

Specific solution
How UX approaches a project
Diamond 1: Definition

- **Discover**: Gather data
- **Define**: Narrow scope

General problem → Specific problem
Diamond 2: Execution

Specific problem

Design
Explore options

Deliver
Define solution

Specific solution
Putting it all together

**Discover**
- Gather data

**Define**
- Narrow scope

**Design**
- Explore options

**Deliver**
- Define solution

General problem → Specific problem → Specific solution
A UX approach in practice
General problem 1

We suspect people aren’t finding our dashboards
General problem

Discover
Gather data

Define
Narrow scope

Design
Explore options

Deliver
Define solution
Gather data about the landing page
Google Analytics

Traffic to new public dashboard landing page

<100 pageviews each week

Email announcing a new dashboard
Gather data about existing Program Stats page
Google Analytics

Traffic to existing program statistics search page

~500 pageviews each week
Gather data about the dashboards
Who has seen this view?
Guest views of dashboards

- Admissions Overview Dashboard (front page): 652
- Historical Admissions Dashboard: 168
- Enrollment Overview (front page): 379
- Historical Enrollment: 114
- Historical Enrollment by Field: 71
- Top 10 Largest Programs: 25

Legend:
- Admissions Dashboards
- Enrollment Dashboards
Specific problem 1

People are skipping our dashboards because they are looking for data on a different page.
Specific problem 2

People aren’t navigating to subsequent dashboards within a category
Problem 1 solution

People are skipping our dashboards because they are looking for data on a different page
Problem 1 solution

People are skipping our dashboards because they are looking for data on a different page.
Problem 2: exploring solutions

Wireframes quickly communicate a page’s structure, acting as a blueprint.

Wireframes do not include colors, fonts, logos, or any other decorative elements.
Problem 2 solution

People aren't navigating to subsequent dashboards within a category.

Graduate Education Data

I want to view data about:
- Admissions Overview: Annual fall admissions funnel, applicant demographics, and trends since 2008-09.
- Admissions Historical: Fall application, admit, and intent to register counts since 2008-09.
- Enroll Overview: Annual student, degree objective, and demographic counts since 1968-69.
- Enroll Historical: Student degree objectives and demographics since 1968-69.
- Enroll Largest Programs Over Time: Top 10 largest graduate programs since 1968-69.
- Enroll Historical (by Field and Major): Number of enrolled students by major within a chosen field since 1968-69.
Did it work?

Yes, but...
General problem 2

We still don’t know how people are interacting with our dashboards
Gather data about visitor interactions

To get concrete data, we ran a **usability test**. Five people were brought in to test our dashboards.

Each was provided 10 tasks to complete while our team observed in another room.
Gather data about visitor interactions

Tasks were based on real-world scenarios:

- “Find the dashboard page on our website.”
- “How long does it take URG students in our program to complete a doctorate compared to non-URG students?”
There were many findings from the test
Specific problem 1

Participants searched for data on a different page and didn't notice the link to our dashboards
Specific problem 2

Participants did not understand the difference between categories – "Overview" and "Historical" sounded the same
Specific problem 3

Participants could not find notes and definitions
Discover
Gather data

Define
Narrow scope

Design
Explore options

Deliver
Define solution

Specific problem

Specific solution
Specific problem 1 solution

Participants searched for data on a different page and didn't notice the link to our dashboards.
Specific problem 1 solution

Participants searched for data on a different page and didn't notice the link to our dashboards.
Specific problem 2 solution

Participants did not understand the difference between categories – "Overview" and "Historical" sounded the same.
Specific problem 2 solution

Participants did not understand the difference between categories – "Overview" and "Historical" sounded the same
Specific problem 3

Participants could not find notes and definitions
Specific problem 3

Participants could not find notes and definitions
Did it work?

Percentage of dashboard traffic generated from this page

Before: 27%  
After: 45%
Did it work?

Over 350% increase in visitors
How things looked over time
You don’t need to be a UX Designer

Anyone can apply a UX approach to their work.

Learn how to wireframe and run usability tests with this resource sheet.

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Try a UX approach with these resources

**Wireframing 101**

- Watch this 3 minute demonstration:
- Learn the basics:
- Learn about the benefits of wireframing:
  [https://boagworld.com/design/the-7-wonders-of-wireframes/](https://boagworld.com/design/the-7-wonders-of-wireframes/)
- Download these templates and try it yourself:

**Usability testing 101**

- Watch this 25 minute demonstration:
  [https://youtu.be/1UC8QBu_a58](https://youtu.be/1UC8QBu_a58)
- Learn the basics:
  [https://boagworld.com/usability/usability-testing/](https://boagworld.com/usability/usability-testing/)
- Learn about writing usability tasks:
  [https://www.nngroup.com/articles/better-usability-tasks/](https://www.nngroup.com/articles/better-usability-tasks/)
- Download these templates and try it yourself:
  [https://www.sensible.com/downloads-rsm-e.html](https://www.sensible.com/downloads-rsm-e.html)

PDF with links to UX resources
Questions

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