The Process of Data Visualization: Changing a Static Report to an Interactive Dashboard

Christopher Childs, University of Central Florida

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Data Visualization vs Dashboards What's the Difference?

Data Visualization

A single representation of multiple sets of refined information (Datawatch, 2015)

Dashboard

A group of resources combined into one unified visual display (Keihani, 2015)

What are we going to talk about today?

1. Student Success Feedback Report
2. How to view data visualization
3. Asking the right questions
4. DirectConnect meeting with partner institutions
5. Sketching out the story
6. DirectConnect dashboard
7. Continuing the data visualization process

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DIRECT
CONNECT
TO UCF
WELCOME

DirectConnect to UCF History

DirectConnect to UCF guarantees admission to UCF for students who received associates degree from a partner institution with a 2.0 or higher GPA

Student Success Feedback Reports were created for partner institutions to receive information about their students enrolled at UCF

Feedback reports designed for Collaboration

These reports are built to be mutually beneficial: partner institutions and UCF can enact better planning strategies as a result

Area	Benefit
Admissions	Is there a demographic disparity between FTIC and Florida State College (FCS) Transfers to address?
Academic Performance	Are there discrepancies in general education training that yield difficulties in higher-level courses for one group over the other?
Advising	Do students from any particular partner institution choose certain majors?
Graduation	Compared to other FCS transfers and FTIC's, do students graduate at a comparable rate?

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Purpose of the Report

This report is designed to…

- Provide each of the partner institutions with information regarding **enrollment**, **progression**, and **graduation** of their students who have moved onto UCF
- Allow for **comparison** between groups of UCF students who previously attended partner institutions, attended other Florida Colleges, or are native FTIC students (University of Central Florida, 2018)

Student Success Feedback Report Contents

Section 1:

State Wide FCS Transfer Trends

- Transfers are split into groups: Consortium, Non-Consortium, Other Transfer
- Enrollment between different Transfer Groups

Section 2:

New Enrollment for FCS Transfers

- Deeper dive into new enrollment of FCS Transfers
- Displayed demographic qualities of each entering cohort

Section 3:

Student Progression at UCF

- Focused on Academic Progression of FCS Transfers at UCF
- Compared FCS transfer progression rates to UCF FTIC

Section 4:

Students at UCF Graduation

- Designed to find qualities of each graduating FCS Transfer Cohort
- Split out consortium students by partner institution

(University of Central Florida, 2018)

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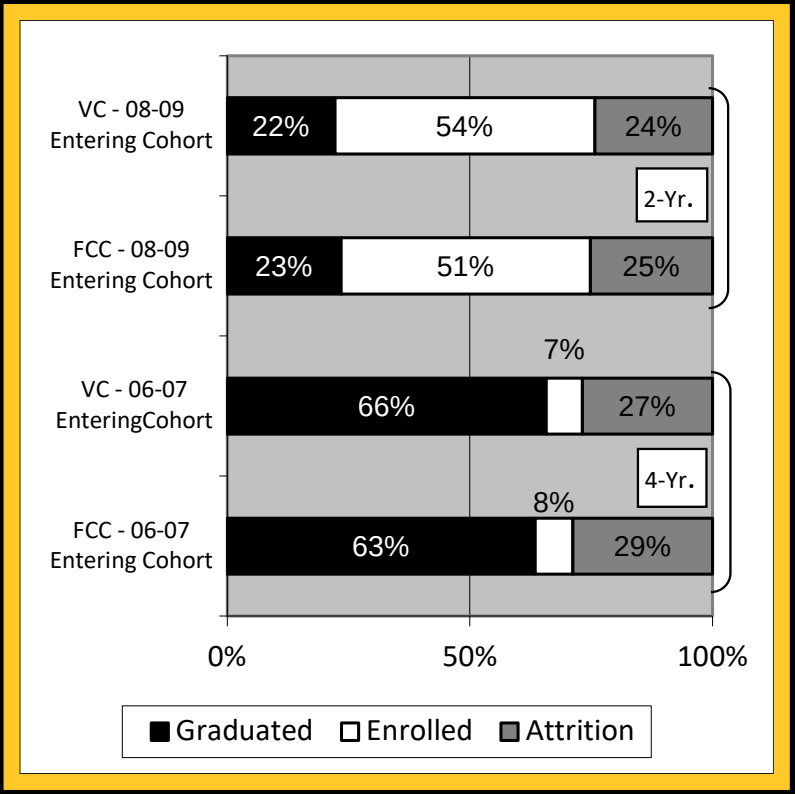
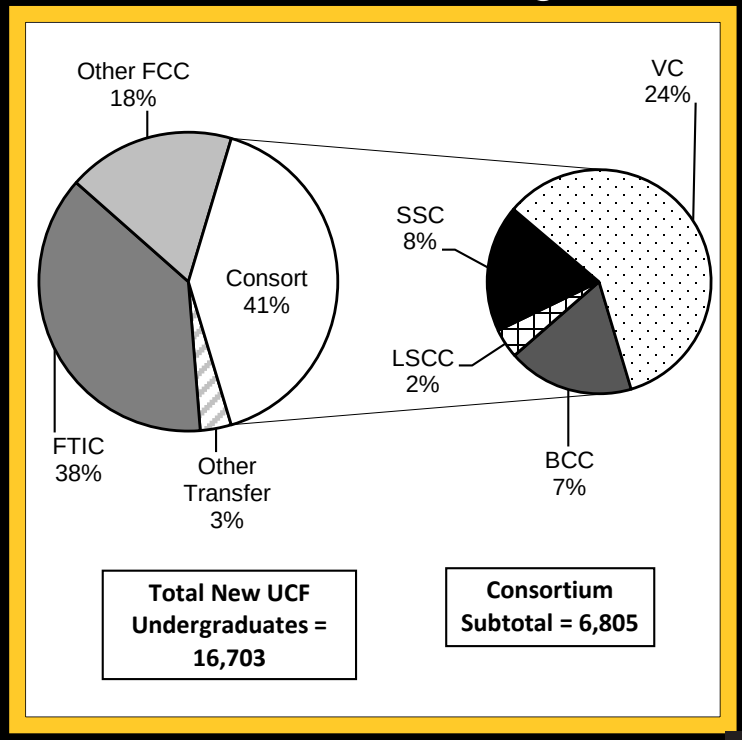
Student Success Feedback Report Visualizations



Graduation-Retention Rates of Consort and Other Florida FCS Transfers

Distribution of Newly Enrolled UCF Undergrads



(University of Central Florida, 2018)

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Why Change to a Dashboard?

The Static Feedback Report swelled to over 20 pages long

Outdated and confusing visualizations

Too much time to update every year

Limited in Scope

How to view data visualization

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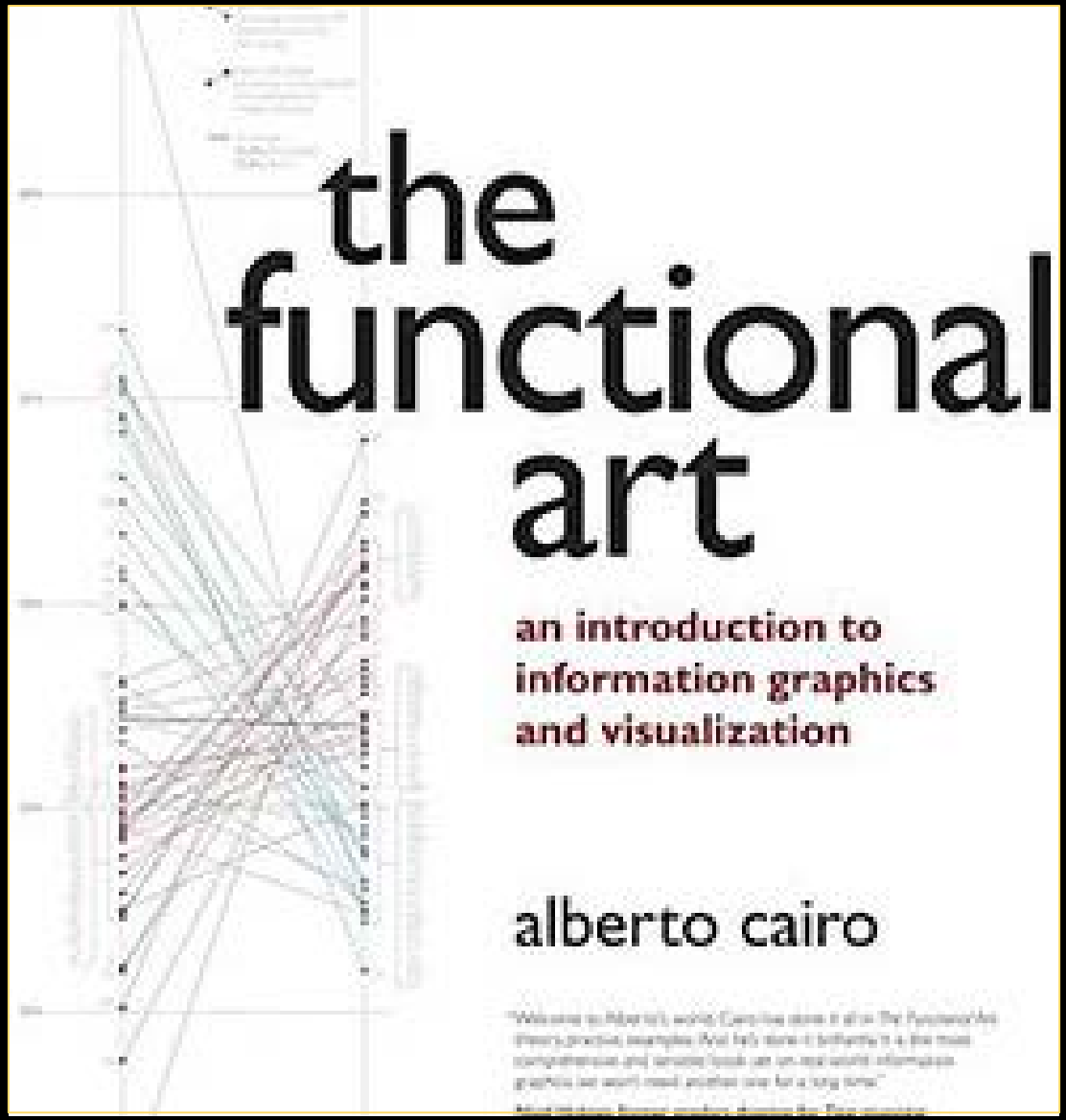
Great Resource for Data Visualization

Alberto Cairo

- Knight Chair in Visual Journalism at the University of Miami
- Author of The Truthful Art: Data, Charts, and Maps for Communication
- Worked as a data-journalist and information designer at El Mundo

(Cairo, 2013)



The world is full of stuff

Stuff is shapeless and useless

The world is filled with raw materials, like Marble

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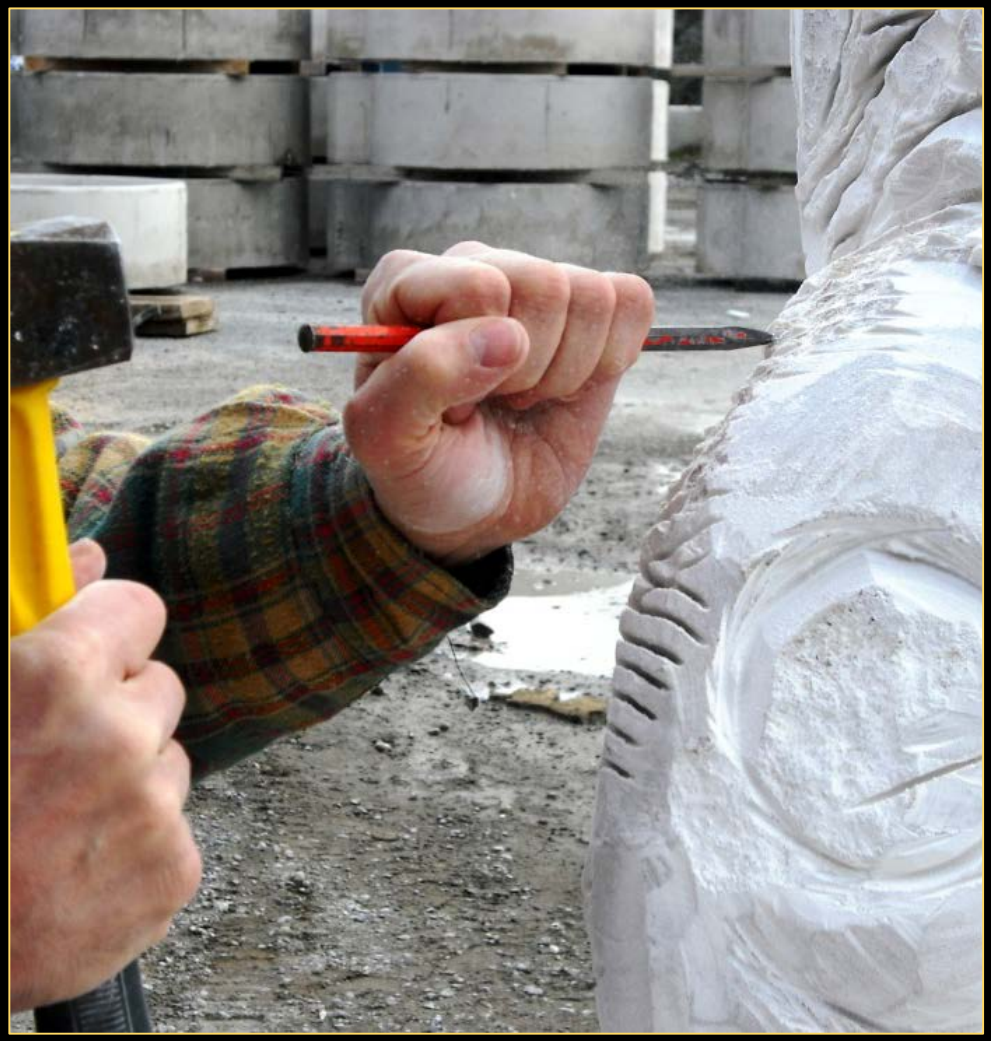
A Human brain envisions a shape that marble can adopt, and a human hand models it



But the shape the brain envisions is not any shape. It depends on a purpose (function).

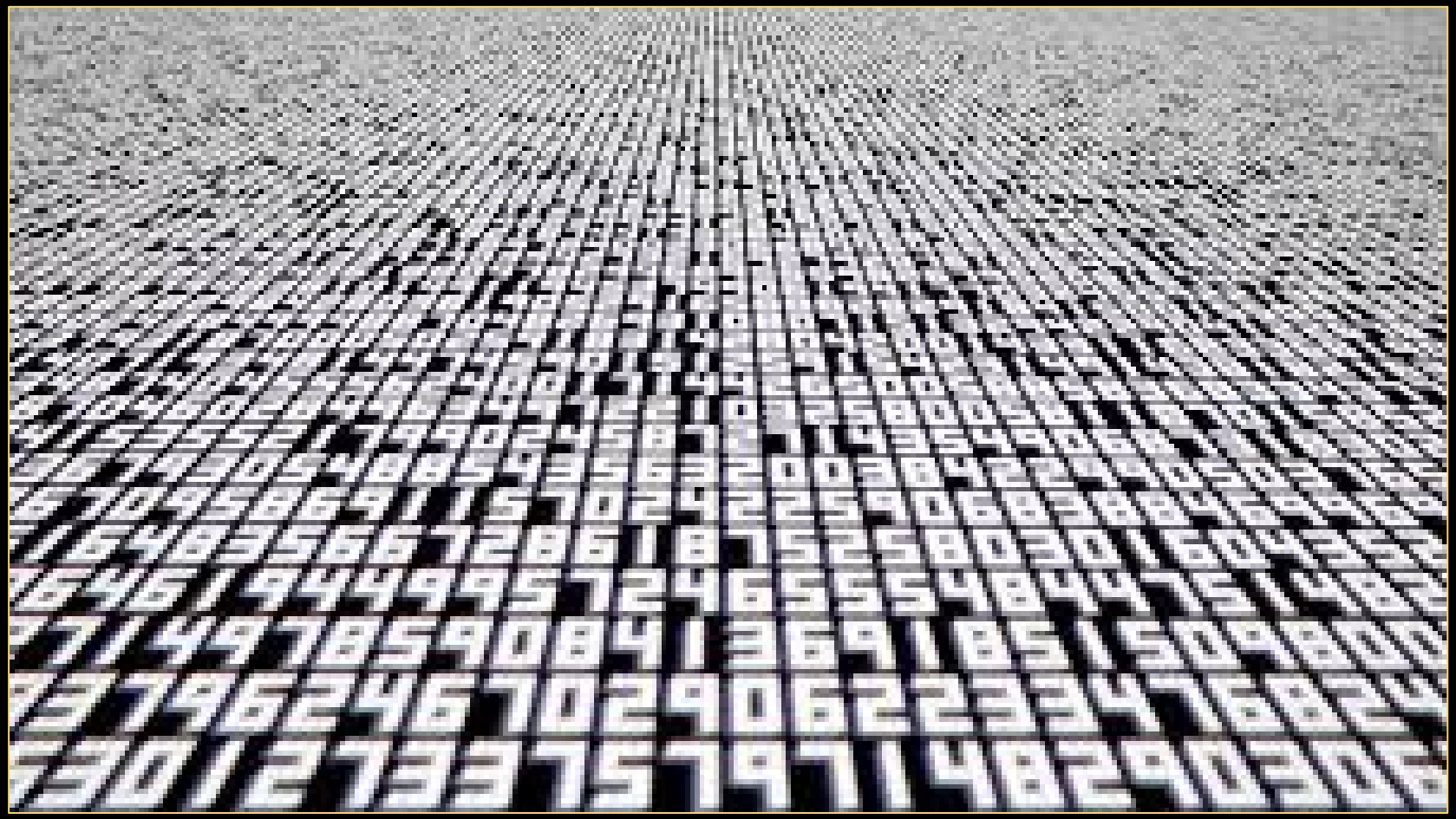
Michelangelo

“Moses”

(1513-1515)

In this case the purpose was to Inspire awe, convey a sense of power, and of majesty

Today, the world is full of even more stuff



Our world is about complexity

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Our goal is to model that raw data and make sense of it

“This is actually a traditional journalistic endeavor; to tame the world’s complexity, and then to summarize it, organize it, and present it” (Cairo, 2013)

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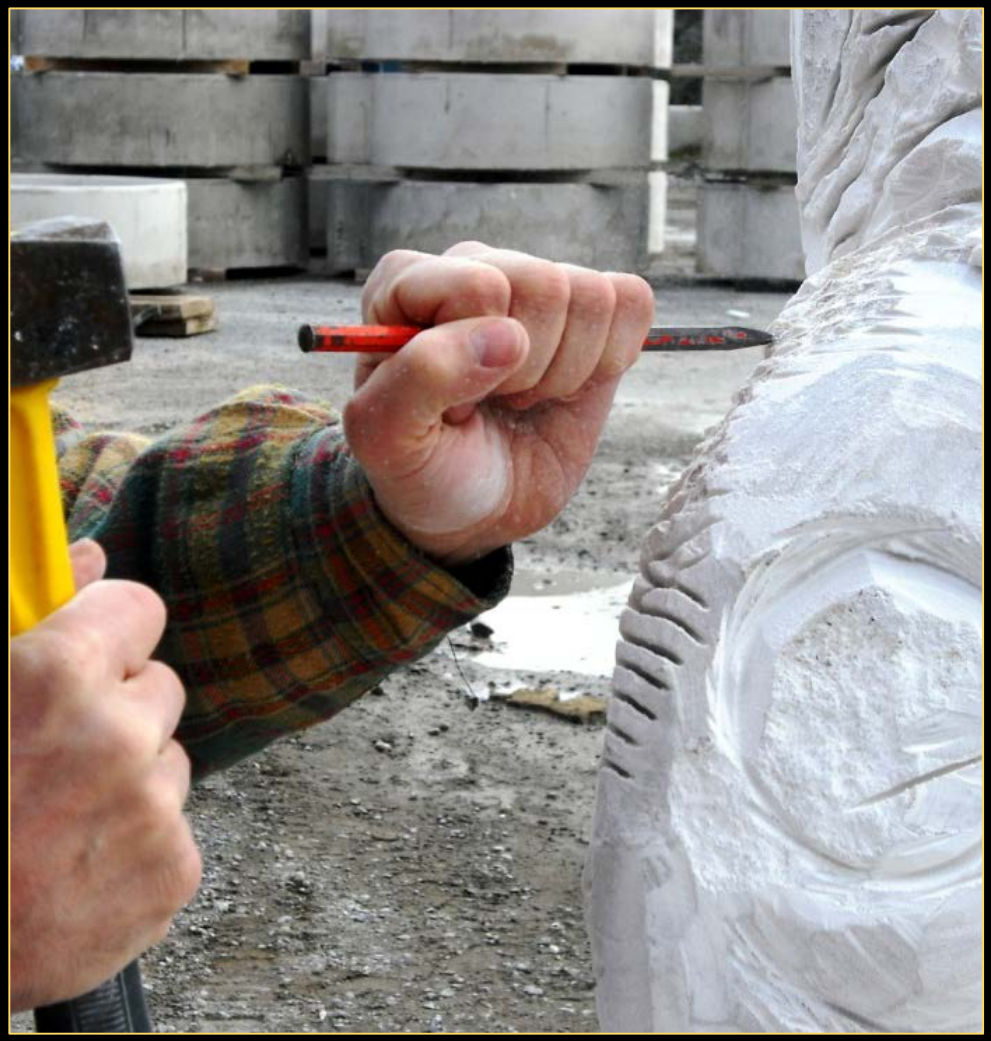
A data visualization is a tool.

It extends our skills and capacities, it lets us see beyond what we would normally see



DIRECT CONNECT TO UCF

What is the purpose of the DirectConnect Dashboards?

What do our institutional partners want to see?

Asking the Right Questions

Before you even switch on a computer, ask yourself what are the questions that your stakeholders want answered

What tasks does your visualization need to accomplish (Cairo, 2013)

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Interview Question Template

(Stakeholder Interview Questions,2018)

1. What is the motivation for wanting this dashboard?

2. What is the business value and outcomes you want to see from this effort?

3. What are your current challenges in relation to reporting?

4. Has anything prevented this project from happening in the past?

5. What metrics do you currently look at?

6. What metrics would you like to see?

7. What are the top questions you want answered from the data?

Useful Dashboard…

Are created for a specific function or purpose

Will be insightful and create more questions from stakeholders

Will be changed as stakeholders demands change

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Meeting with Partner Institutions

Audience:

- IR analysts from each partner institution
- Upper level administration/provost from some partner institutions

What did they like about the Student Success Reports?

- What didn't they like?

Are there any new metrics that can be helpful

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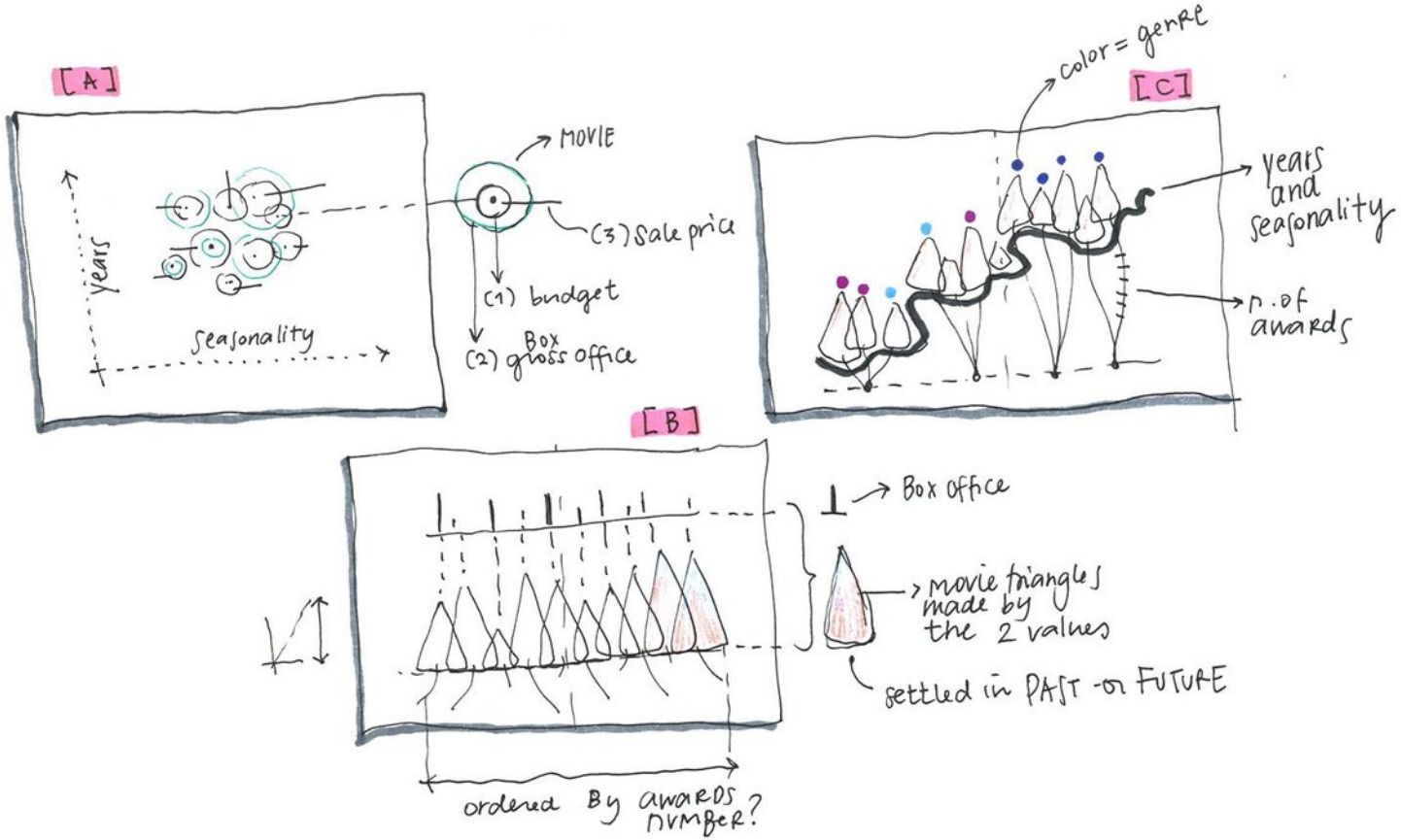


Sketch out the Story:

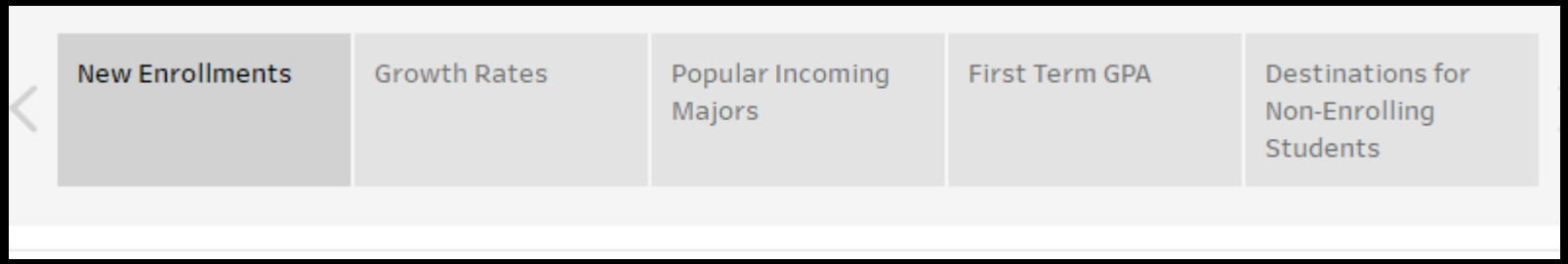
Organize your ideas for visuals into a story. Or group visuals that relate to each other to create a theme

DirectConnect Dashboard Stories

Created 3 dashboards for Enrollment, Progression, and Completion

Within the New Enrollment and Degrees Awarded dashboards, visualizations are arranged into stories

New Enrollment Dashboard Stories



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Gender

(All)

Full/Part Time

(All)

Ethnicity

- [x] (All)
- [x] American Indian/Alaska Na...
- [x] Asian
- [x] Black/African American
- [x] Hispanic/Latino
- [x] International
- [x] Multi-racial
- [x] Native Hawaiian/Other Pac...
- [x] Not Specified
- [x] White

(Select to Highlight)

- College of Central Florida
- Daytona State College
- Eastern Florida State College
- Lake-Sumter State College
- Seminole State College of FL
- Valencia College

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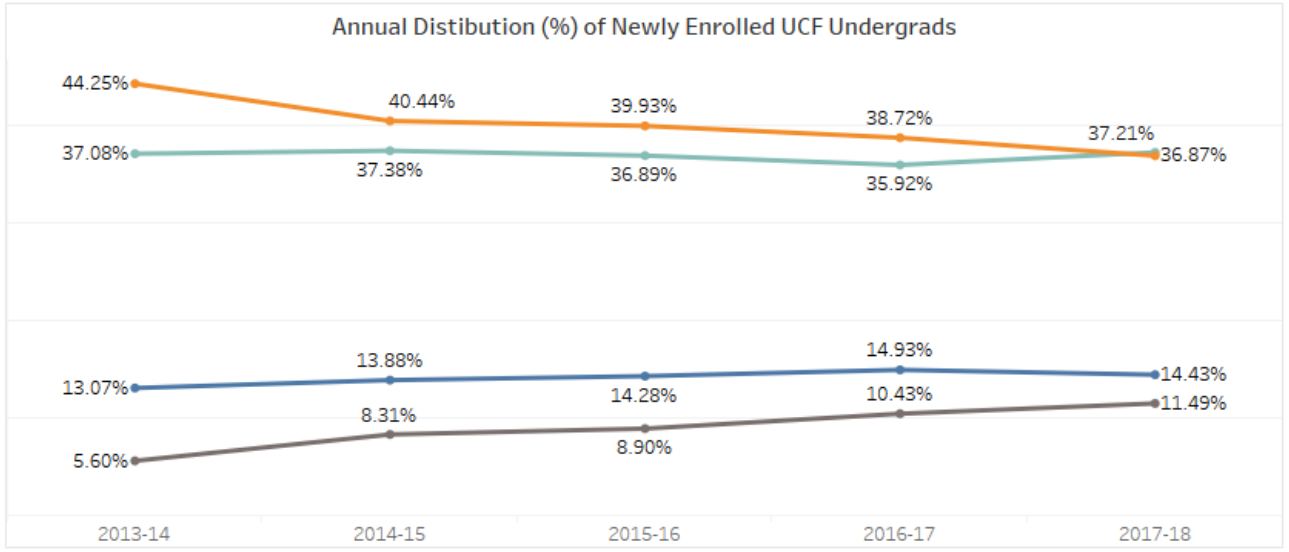

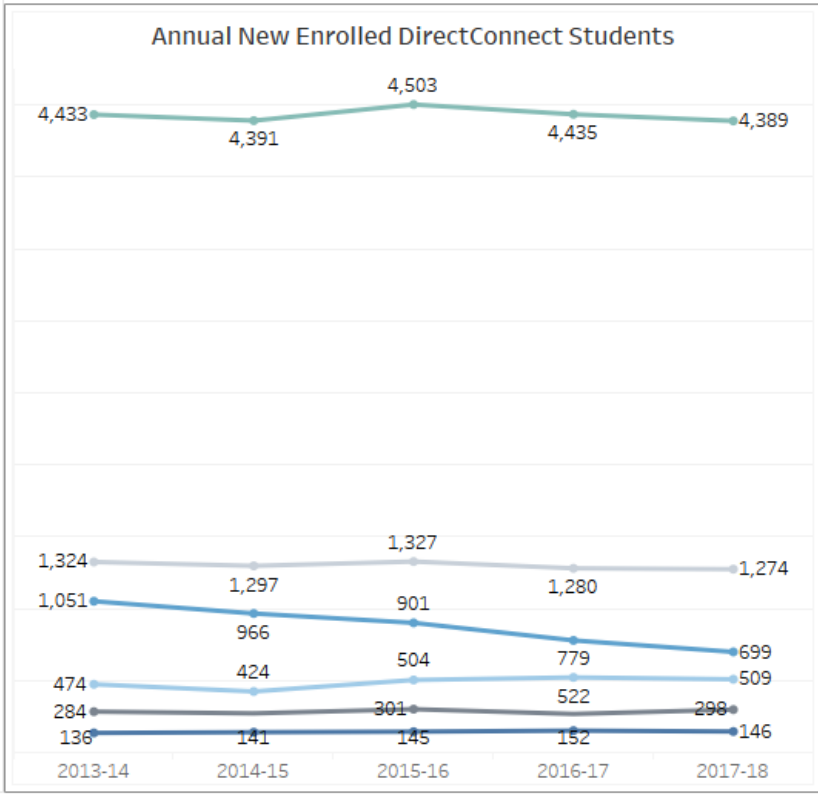

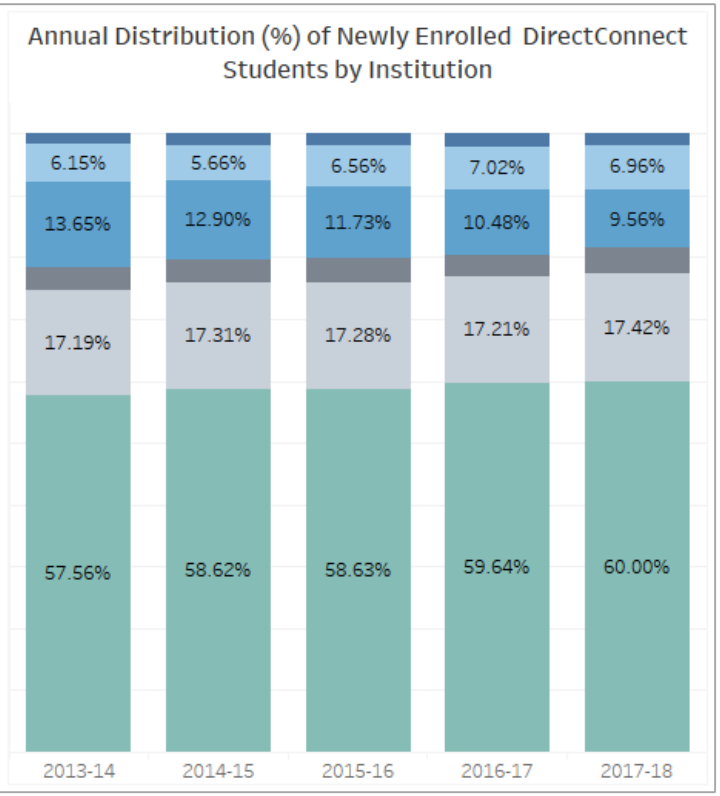

Status

- (•) Admitted - Not Enrolled
- ( ) Denied

Academic Year

- [x] 2017-18
- [x] 2016-17
- [x] 2015-16
- [x] 2014-15
- [x] 2013-14

Ethnicity

(All)

Gender

(All)

Select Institution or Student Type

- (•) (All)
- ( ) College of Central Florida
- ( ) Daytona State College
- ( ) Eastern Florida State College
- ( ) Lake-Sumter State College
- ( ) Seminole State College of FL
- ( ) Valencia College
- ( ) Non-Consortium
- ( ) Others
- ( ) FTIC

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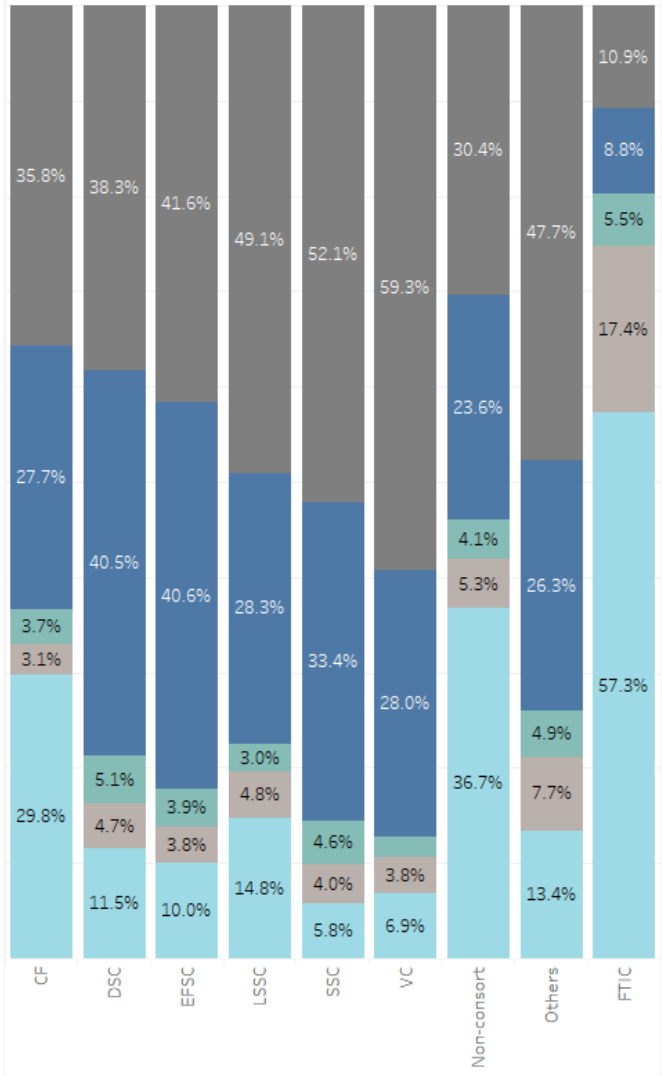
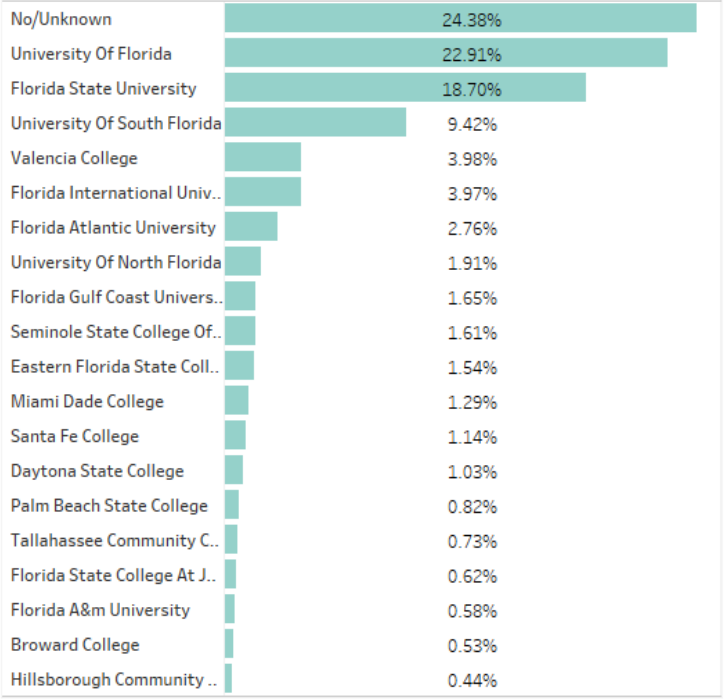
Destinations for Admitted - Not Enrolled Non FTIC Students



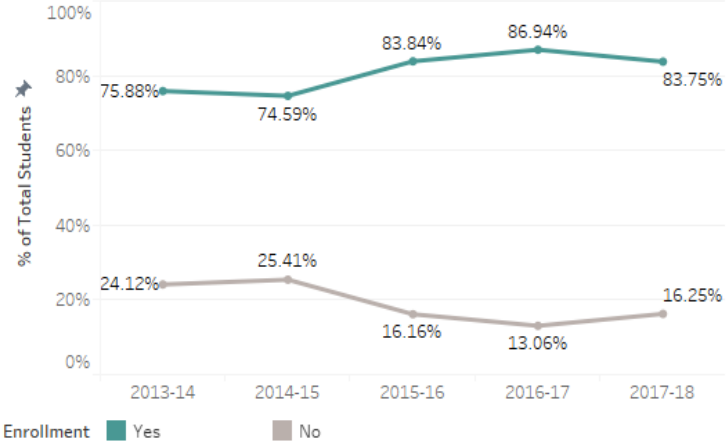
Alternate Institution Type

- No/Unknown
- Other FL 4-Yr.
- SUS
- FL Comm. Colle..
- Out of State

Destination Institutions for Non FTIC Students



Percent of Students Who Enrolled in Other Institutions by Year



Enrollment

- Yes
- No

Degree Award Year

(All)

Gender

(All)

First Generation

(All)

Pell Received

(All)

Ethnicity

- (All)
- American Indian/Alas...
- Asian
- Black/African Americ...
- Hispanic/Latino
- International
- Multi-racial
- Native Hawaiian/Oth...
- Not Specified
- White

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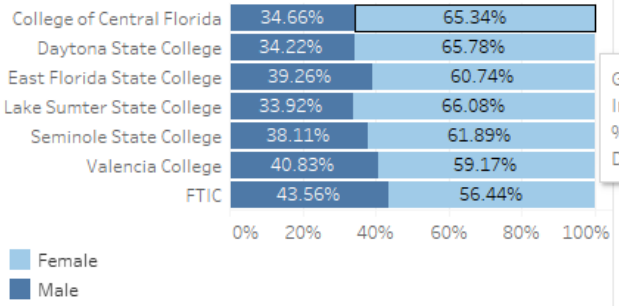
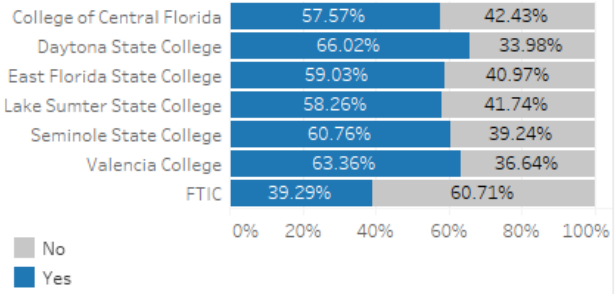
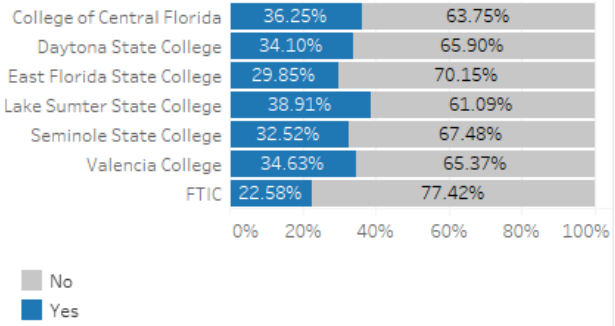
Percent of Graduates by Gender : All



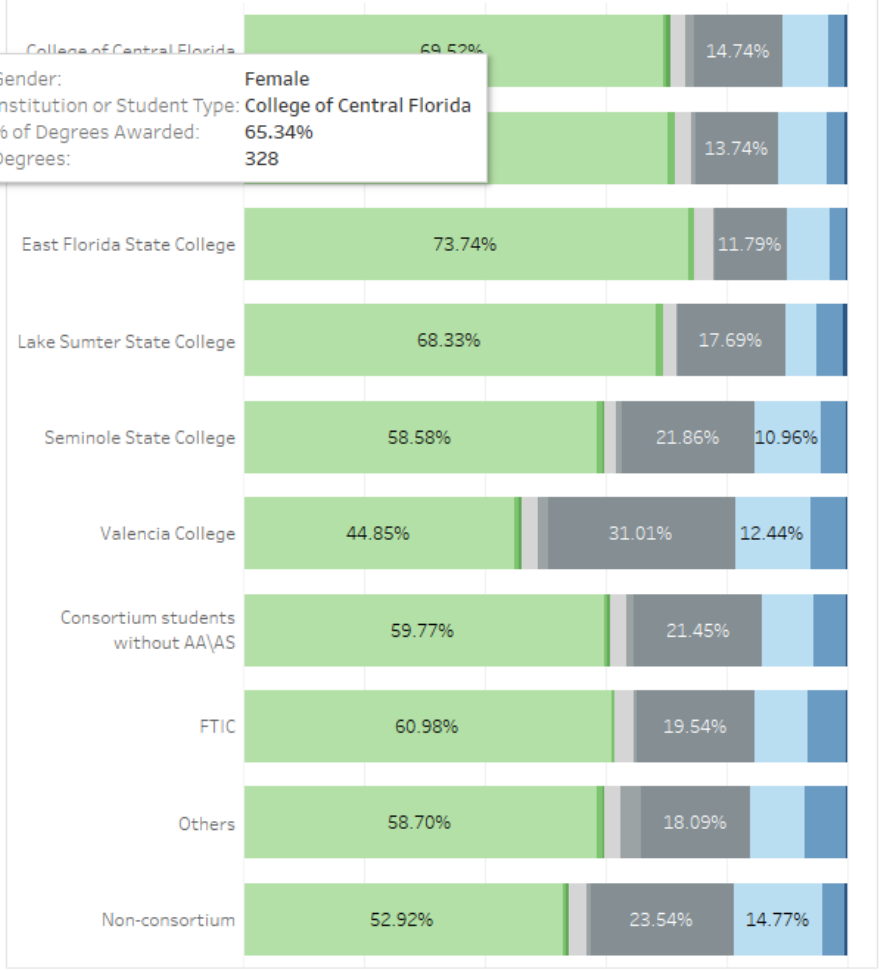
Percent of Graduates Ever Awarded Pell : All



Percent of Graduates - First Gen: All



Percent of Graduates by Ethnicity : All



Gender

(All)

Pell Eligible

(All)

First Generation

(All)

Ethnicity

- [x] (All)
- [x] American Indian/Alaska Nati...
- [x] Asian
- [x] Black/African American
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- [x] International
- [x] Multi-racial
- [x] Native Hawaiian/Other Paci...
- [x] Not Specified
- [x] White

Institution or Student Type

(Multiple values)

(Select to highlight)

- College of Central Florida
- Daytona State College
- East Florida State College
- Lake Sumter State College
- Consortium students without ..
- Seminole State College
- Valencia College
- FTIC

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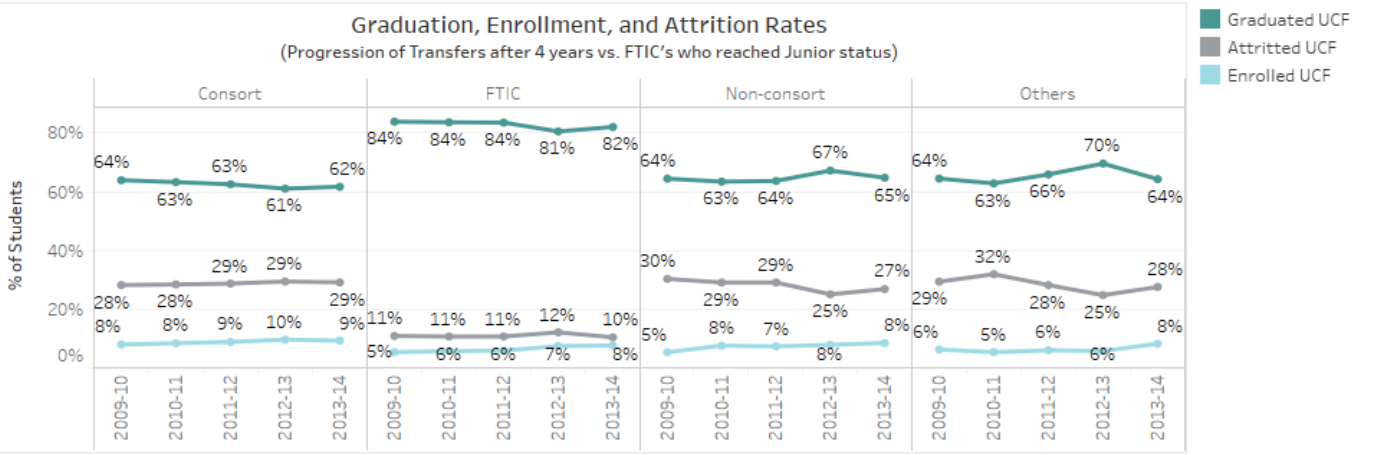
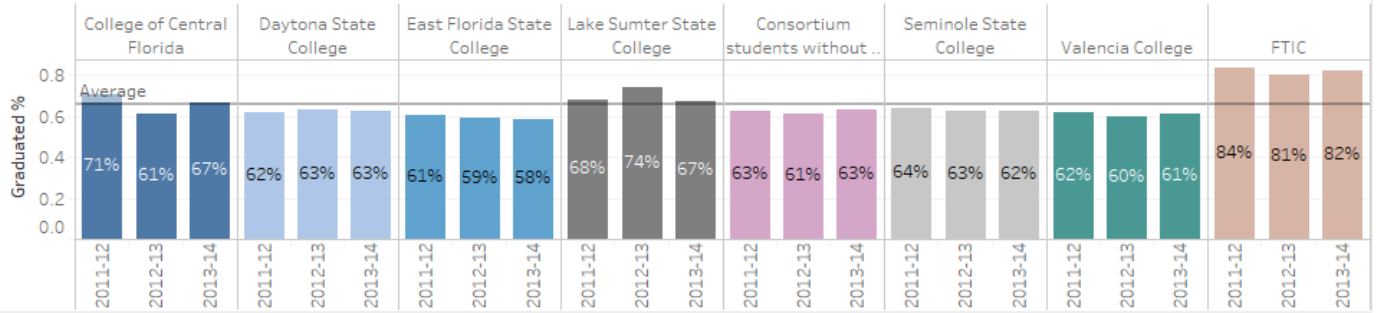
Graduation, Enrollment, and Attrition Rates

(Progression of Transfers after 4 years vs. FTIC's who reached Junior status)



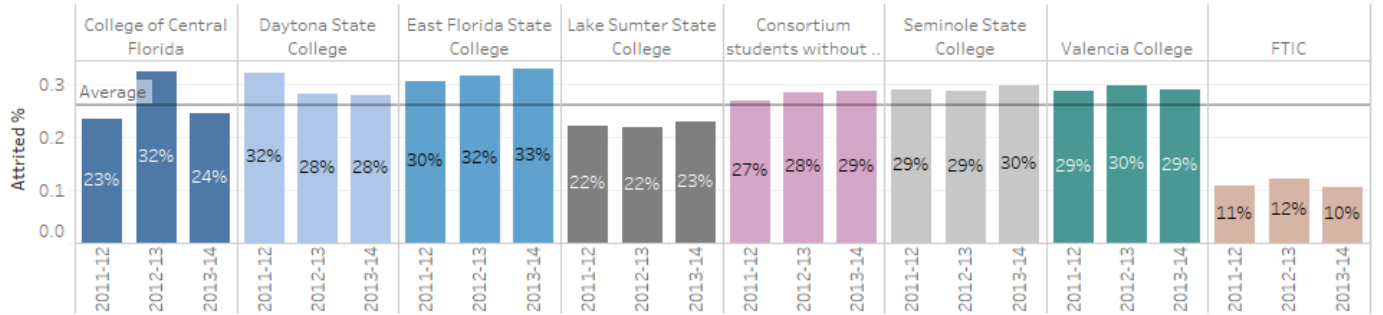
Graduation Status of DirectConnect Students, FTIC's, and Others

(Progression of Transfers after 4 years vs. FTIC's who reached Junior status)



Attrition Status of DirectConnect Students, FTIC's, and Others

(Progression of Transfers after 4 years vs. FTIC's who reached Junior status)



Data Visualization Process is Not Complete

Internal Reviews with staff

Follow-up meetings with stakeholders

Keep the lines of communication open with stakeholders to continue feedback on visualizations

References

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