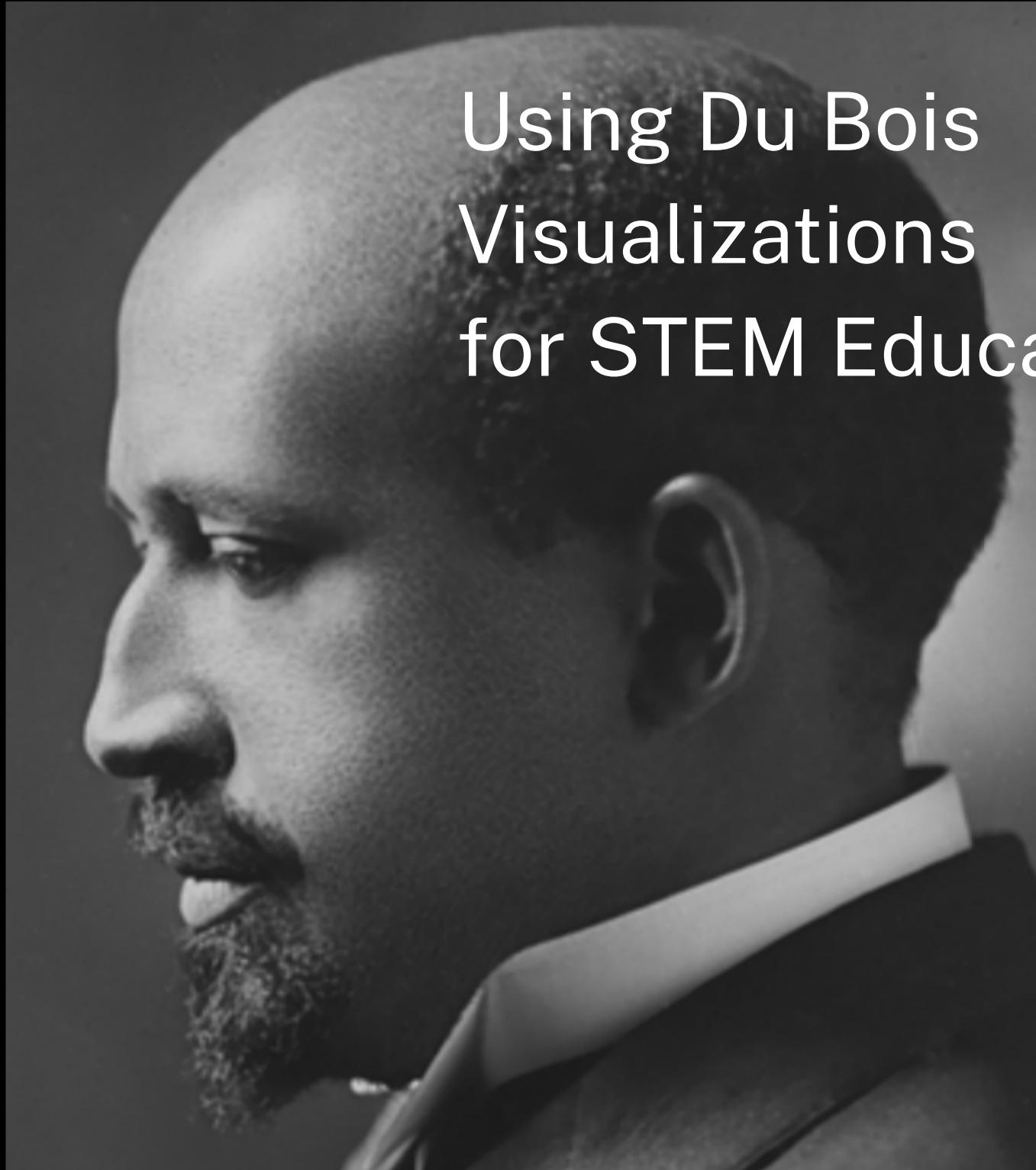Du Bois SERVE Project

Using Du Bois Visualizations for STEM Education

Outline

The Du Bois STEM module has three sections:

[1] Context   explaining the motivation of the Du Bois visuals in a historical context.

[2] Explore   an analog exercise to analyze and re-create Du Bois visuals using hand-drawn methods.

[3] Implement   Re-create Du Bois style visuals using digital tools.

Context
(Why)

- Context/History
- Motivation
- Message
- Overview of the 1900 Expo

Explore
(What)

Deconstruct

- Select sample plate(s)
- Message and Audience
- Aesthetics/design
- Analytical methods
- Chart Types

Recreate

- Hand drawn
- Rapid iteration
- Peer review

Modernize

- Apply with modern data

Evaluate

- Clarity of Message
- Updates

Apply
(Implement)

Implement the charts with the digital tool of your choice
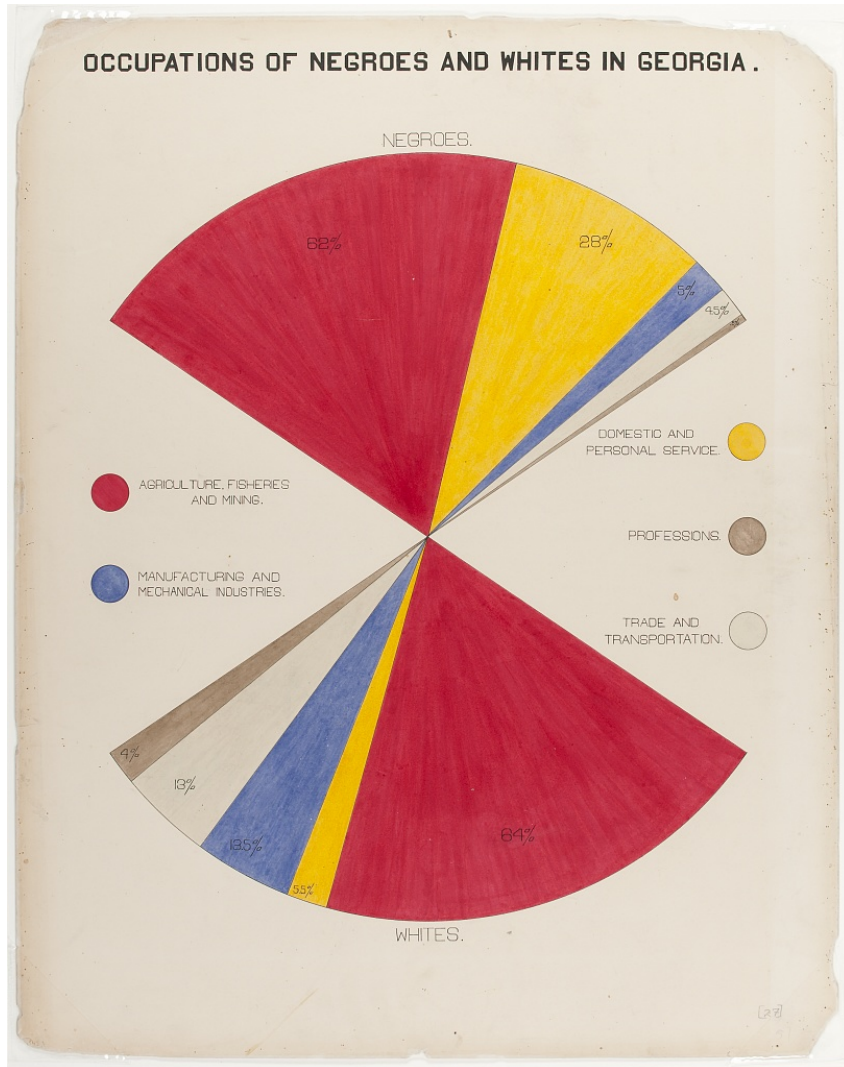
- R
- Stata
- python/matlab
- ...

Exploration

This section is a hands-on session that will take a sample Du Bois visualization, and reconstructs and analyzes various aspects of the visual.

The exercise aims to recreate the sample visual using hand-drawn methods (pens, paper, markers, etc.), to immerse the students in the act of creation, while thinking about the context and messaging. Rapid iteration and peer review may be used to gauge effectiveness of the visual. Next, drawing with modem data may be introduced.
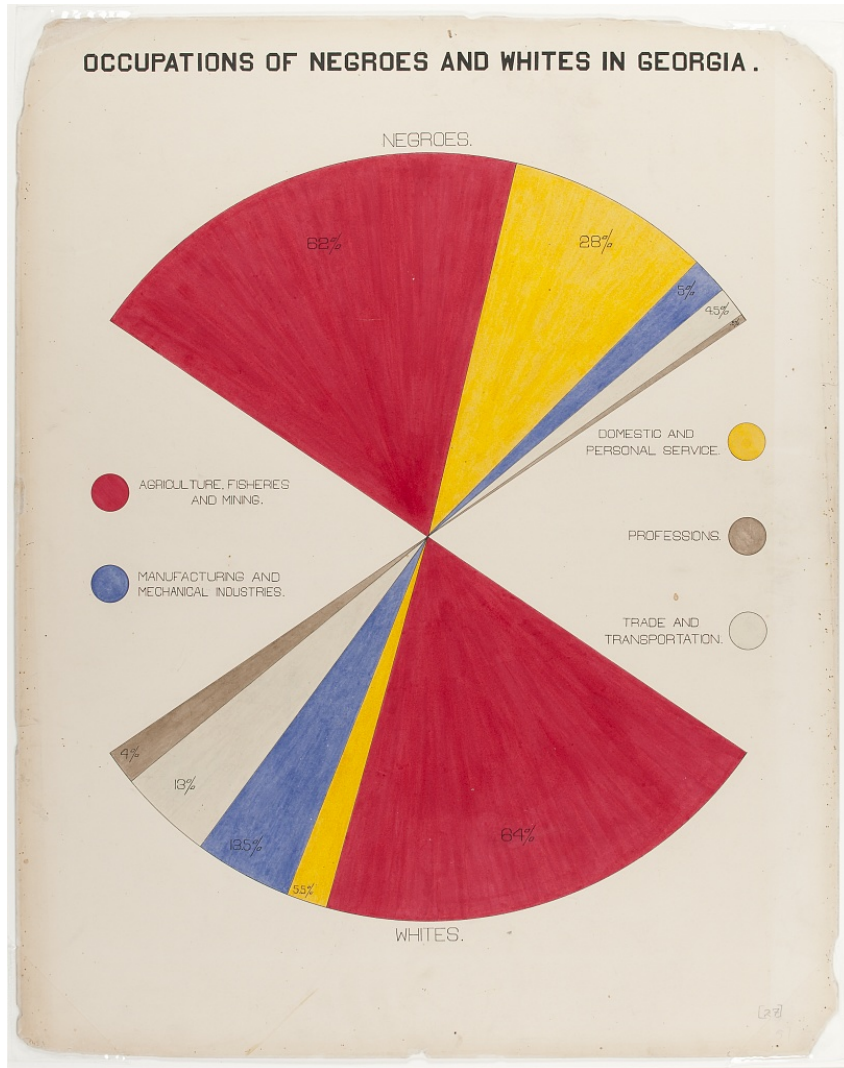
Materials: Pens/Paper   Time: 45-60 minutes

Exploration: Deconstruction

OCCUPATIONS OF NEGROES AND WHITES IN GEORGIA.

- Message and Audience

- Aesthetics/design

- Analytical methods

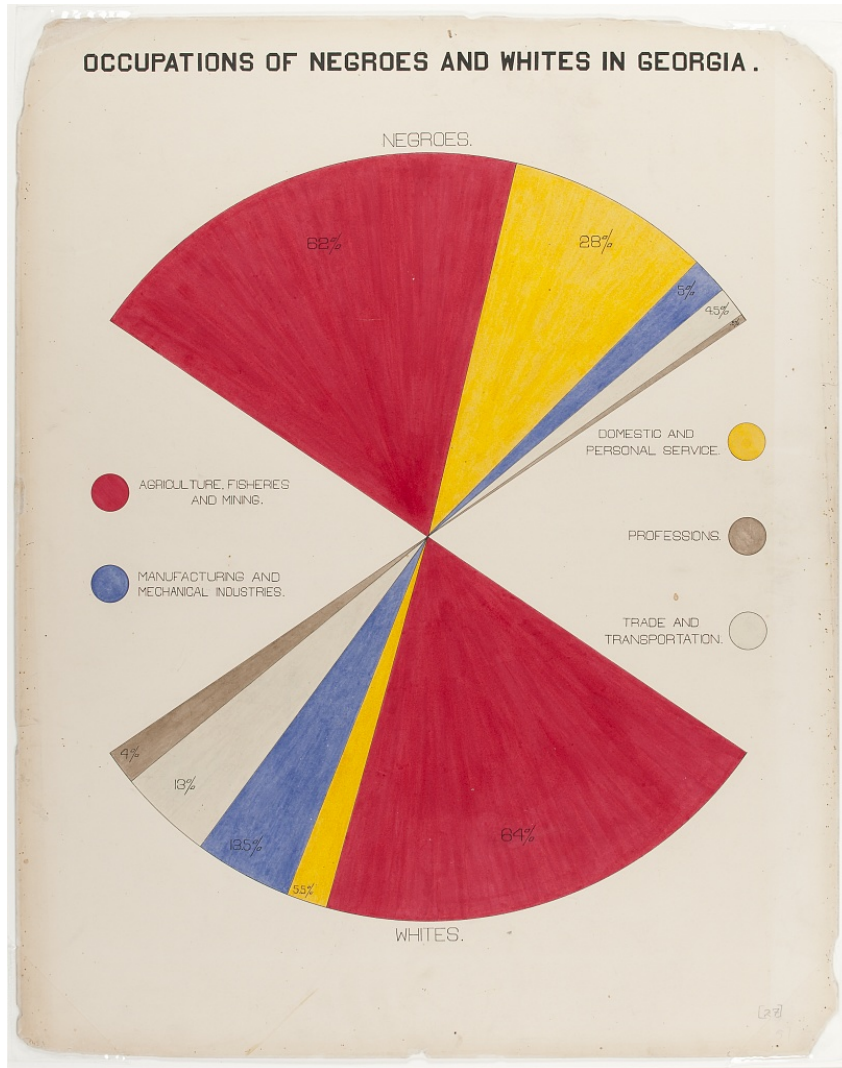- Chart Types

Exploration: Deconstruction (Message)

The message of the visual is tied to the overall message from Du Bois at the Paris Exposition:

Describe the status and progress of Black Americans since emancipation.

The visual compares the occupations of Black and white populations of Georgia, showing parity for some occupations, while highlighting differences for others

Activity: Discuss the message that the visual is attempimg to convey

Exploration: Deconstruction (Aesthetics and Design)

OCCUPATIONS OF NEGROES AND WHITES IN GEORGIA.

NEGROES.

62%

28%

5%

4.5%

AGRICULTURE, FISHERES AND MINING.

MANUFACTURING AND MECHANICAL INDUSTRIES.

DOMESTIC AND PERSONAL SERVICE.

PROFESSIONS.

TRADE AND TRANSPORTATION.

4%

13%

19.5%

.5%

64%

WHITES.

The visual uses proportionally sized wedges to encode the numbers. The populations are arraged, in sections, top (Black), and bottom (white) such that the wedges may be easily compared.

Also note the legends arranged on the left and right, arranged in the gaps between the wedges.

The visual uses the typical Du Bois color palette

Exploration: Recreate

Exploration: Modernize

Exploration: Evaluation

Exploration: References

1. Du Bois Visualizations for Consideration in STEM Education

https://github.com/ajstarks/dubois-data-portraits/tree/master/dubois-stem

2. Du Bois Visualization Style Guide

https://github.com/ajstarks/dubois-data-portraits/blob/master/dubois-style.pdf

3. Recreating the Du Bois Data Portraits

https://speakerdeck.com/ajstarks/recreating-the-dubois-data-portraits

4. Du Bois Visualizations Catalog (originals)

https://speakerdeck.com/ajstarks/du-bois-visualizations-originals

5. African American Photographs Assembled for 1900 Paris Exposition

https://tinyurl.com/smamzvtv

6. W.E.B. Du Bois Data Portraits, Visualizing Black America

https://papress.com/products/w-e-b-du-boiss-data-portraits-visualizing-black-america

7. Black Lives 1900, W.E.B. Du Bois at the Paris Exposition

https://www.theredstoneshop.com/products/black-lives-1900

Implementation