The most difficult school subject (according to Jeopardy)

ERHS 535

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Overview

Research question

What are the most important and most difficult school subjects according to Jeopardy?

Introduction

- Initial data investigation showed subject bias
- Prompted us to consider traditional school subjects
- Decided to compare "Jeopardy-based" education to public school education

Methods: Overview

- Created a dataframe of school subjects and related terms (from Quizlet)
- Separated Jeopardy dataset into 6 subjects (science, math, history, english, geography, and art) by "joining" it with the Quizlet dataframe

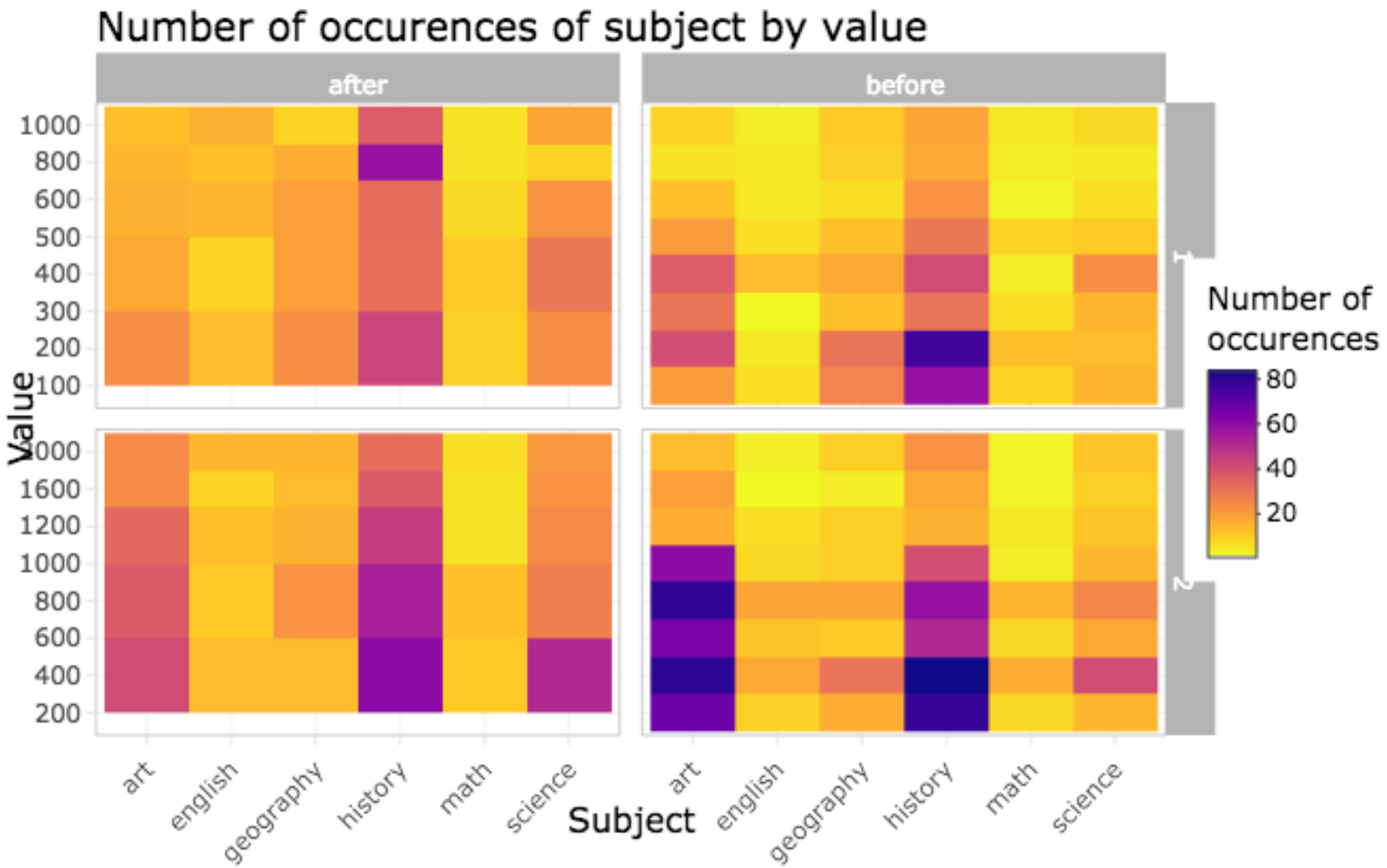
Methods: Joining dataframes

- Converted all Jeopardy data and school subject data to lowercase and removed all special characters
- Randomly sampled 155 vocab terms from school subject data
- Used `inner_join` from the `dplyr` pacakage to match a the "question" to a specific vocab term
- Grouped the "questions" by subject

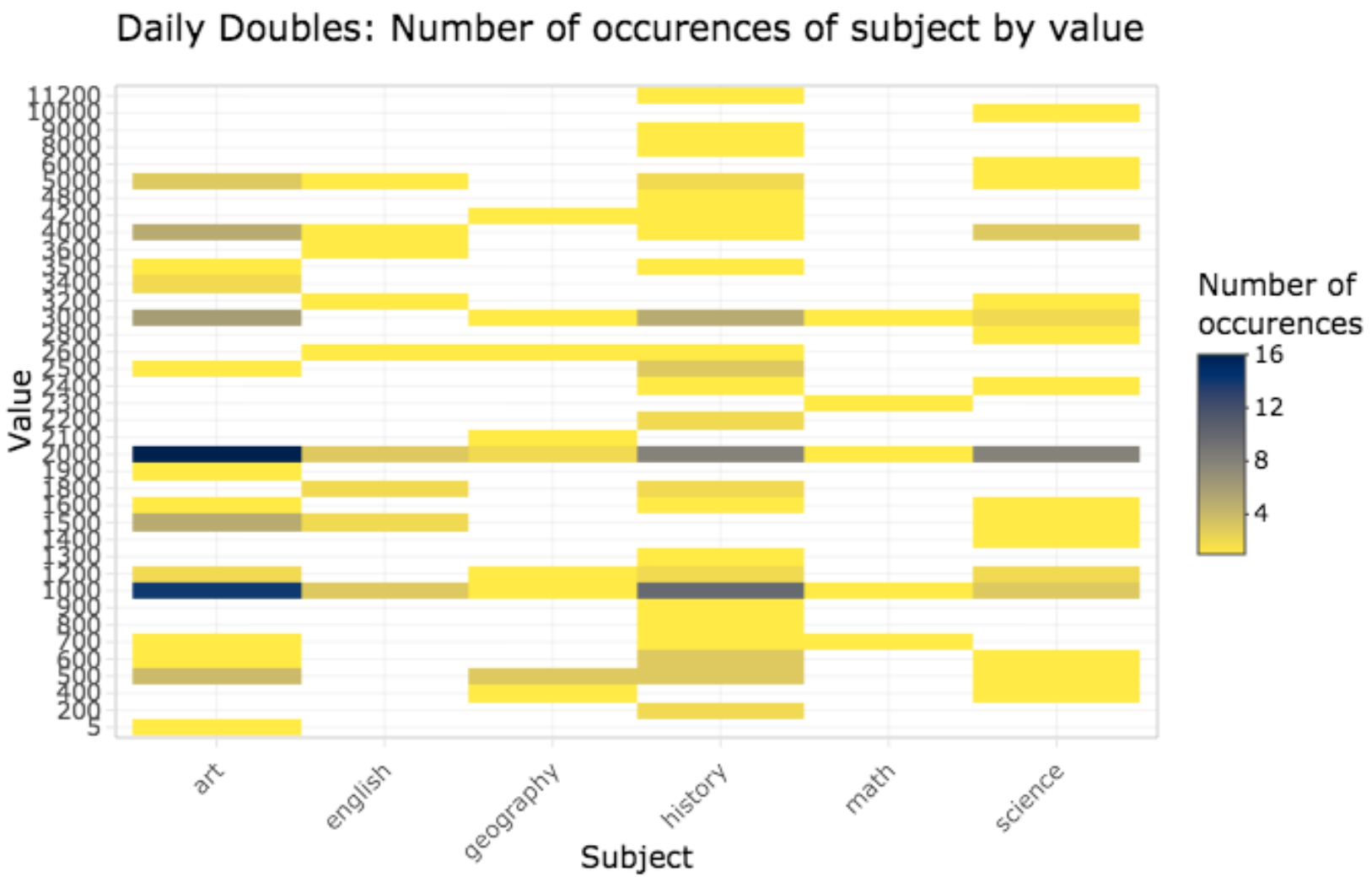
Methods: Determining subject importance and difficulty using joined dataframe

- Discovered answer value changes after November 26, 2001 and decided to separate data into two categories
- Calculated number of occurances of each school subject (most important subject)
- Calculated average value of all "answers" for each school subject (most difficult subject)
- Graphed results using interactive heat map faceted by round and date

Results: Heat map for round 1 and 2



Results: Merging round 1 and 2 heat maps



Results: Summary Statistics before 11/26/2001

	Before November 26, 2001	
subject	**mean_value**	**subject_total**
history	**679.62**	**471**
art	**782.87**	**397**
science	746.59	249
geography	563.98	236
english	645.60	125
math	574.29	105

Results: Summary statistics after 11/26/2001

	After November 26, 2001	
subject	**mean_value**	**subject_total**
history	**965.05**	**309**
science	925.00	280
art	**1034.51**	**226**
geography	842.44	172
english	1007.35	136
math	803.85	78

Conclusion

- AP test scores: Geo, English, History, Science, Math, Art
- Round 1: Art, Science, History, English, Math, Geo
- Round 2: Art, English, History, Science, Geo, Math

Tutorial

Overview: Approach in R

Packages and techniques

Lessons learned

References