

The most difficult school subject
(according to Jeopardy)

ERHS 535

Jacob Fontenot, Burton Karger, Eric Wendt, Caroline Wendt

12/13/2019

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

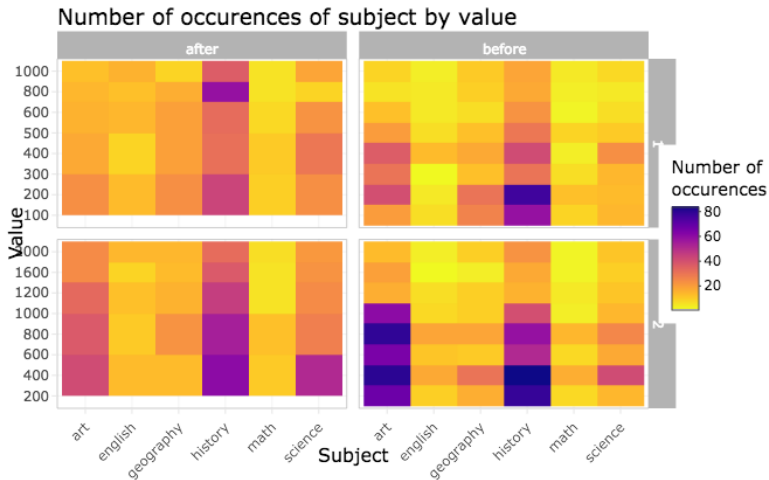
Methods: Joining dataframes

- ▶ 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` package to match a the “question” to a specific vocab term
- ▶ Grouped the “questions” by subject

Methods: Determining subject importance and difficulty using joined dataframe

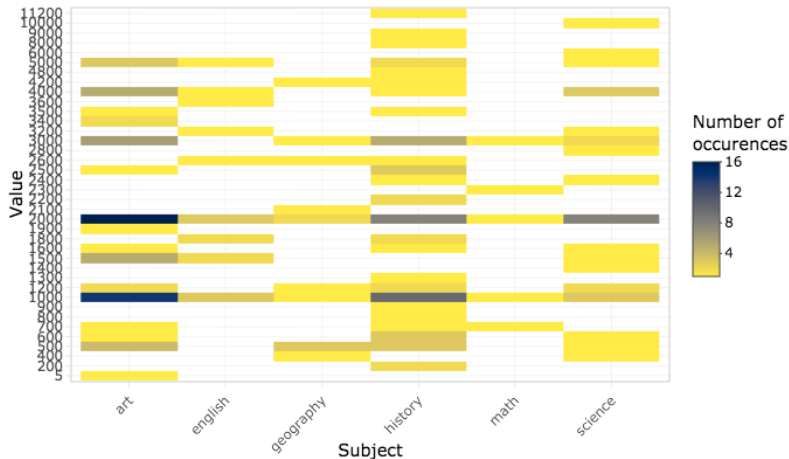
- ▶ Discovered answer value changes after November 26, 2001 and decided to separate data into two categories
- ▶ Calculated number of occurrences of each school subject (most important subject)
- ▶ Calculated average value of all “answers” for each school subject (most difficult subject)
- ▶ Graphed 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

Daily Doubles: Number of occurrences of subject by value



Results: Summary Statistics before 11/26/2001

subject	Before November 26, 2001	
	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

subject	After November 26, 2001	
	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