

Early Student Feedback Process

Automation Tools

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Goals - Main purpose of the project

The Sheridan Center and other educational institutions conduct a mid-semester survey process known as the Early Student Feedback Process. This mid-semester feedback process helps faculty members make adjustments to the course during the semester.

This process consists of two stages -

1. Open Ended Response Stage - This stage consists of students responding to three open ended questions
 - a. What is really working for you that helps you learn in this course?
 - b. What improvements could be made in this course?
 - c. What can you as students do to improve this course?
2. Agreement Statement Response Stage - Based on the responses in the first stage, experts come up with salient statements for each question. Students are then asked to rate their agreement on a scale of 1-10 to gauge class agreement.

Currently at The Sheridan Center, responses are collected using Qualtrics, and analysis is done manually on Google Sheets. This manual analysis process is very time consuming. This also means it is difficult to conduct the Early Student Feedback Process for large classes.

This project aimed to create tools to automate part of the process and reduce the time it takes to analyze responses. For this purpose, I created two Colab notebooks, one for each stage, that allow users to paste a link to Google Sheets and generate a report including useful graphs and information for analysis.

Programming Languages and Data Science Tools Used

All the programming for this project was done in **Python** using **Google Colab**.

The packages used for this project were -

1. Numpy
2. Pandas
3. Matplotlib
4. SpaCy
5. NLTK
6. Gensim

Data source

Sample data used for developing the automation tools was obtained from The Sheridan Center through Dr. Eric Kaldor. Future use of these tools would require survey data from The Sheridan Center or other educational institutions.

Benefits to the Sheridan Center

The automation tools, i.e the Colab notebooks, will allow the Sheridan Center to accelerate the Early Student Feedback process for classes. Experts wouldn't have to spend hours analyzing responses. The visualizations created using the Colab notebooks can also be used to convey feedback to faculty members.

The colab notebooks are well commented and organized, allowing for members of the Sheridan Center or future Data Science Fellows to add more visualizations and information to the report.

Screenshots

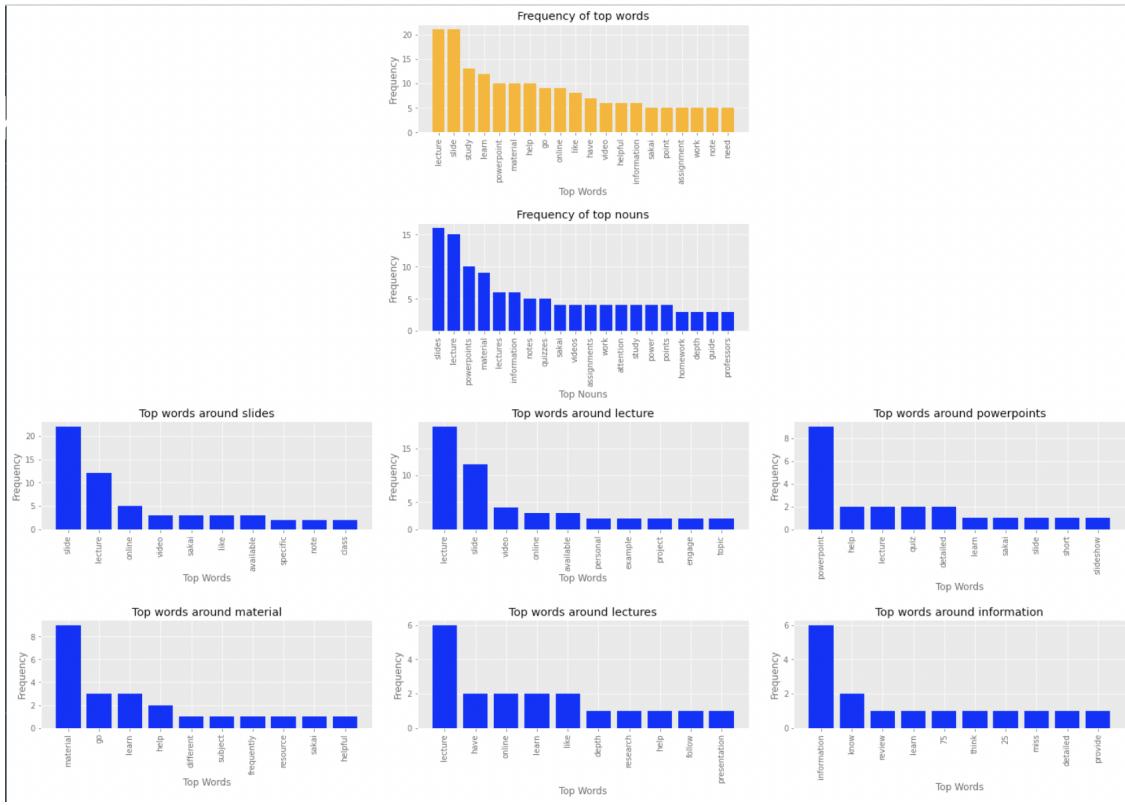
1. Formatting of spreadsheets for stage 1 automation tool

Spreadsheets should be of this format -

1. First row are the questions
2. Second row is as shown
3. Third row and onwards are the responses

	A	B	C
1	What is really working for you that helps you learn in this course?	What improvements could be made in the course?	What can you as students do to improve the course?
2	Open-Ended Response	Open-Ended Response	Open-Ended Response
3	powerpoints are familiar to the readings, mostly everything is discussed in the lecture ...	I think there is a lot of material that is covered and it can be very overwhelming. Lots of the material ...	I think more people should be involved and the readings and really ask questions to get ...
4	personal examples when talking about different subjects ...	Go more in depth with more important topics. We spent a lot of ...	Looking over slides after class may help me ...

2. Summary graphs for first question responses



3. Formatting of spreadsheets for stage 2 automation tool

Spreadsheets should be of this format -

1. First row are the agreement statements
2. Second row and onwards are numeric agreement scores. Each row represents one student's responses to the statements.

Responses are posted on Sakai	group activities	professor includes personal examples	integrations of videos in lectures	related Powerpoints	weekly quizzes	instructor's passion about the topic	less focus on homework grading	slow down pace of lecture	less weight for assignments	make quiz questions more clearly written and explain requirements	clarer expectations for graded assignments	more interactive class	go to office hours	be more engaged during class and assignments	review notes after classes	ask more questions	take more notes during lecture	form study groups
8	6	6	8	9	7	8	6	6	6	7	5	5	6	6	6	6	6	7
9	9	9	9	6	9	9	8	8	9	8	5	3	3	9	6	9	9	9
9	7	9	9	9	9	9	9	3	3	3	3	3	3	9	9	5	9	1
9	3	3	5	3	9	3	9	9	6	9	9	6	7	6	9	7	3	2
9	6	8	8	9	9	8	9	7	8	8	7	6	9	9	5	9	9	9
9	9	9	9	9	9	9	6	6	6	4	2	2	3	9	9	9	9	3
9	6	4	8	9	9	6	9	5	9	6	9	5	5	7	8	9	9	9
9	3	9	9	9	9	9	9	4	9	5	6	3	4	9	9	6	9	9
9	4	6	5	9	9	9	9	2	9	4	9	2	4	9	9	4	9	1
9	2	5	9	9	9	9	9	9	4	9	6	9	9	4	6	6	6	8
9	4	9	8	8	6	9	8	9	6	4	8	9	8	6	7	9	9	5
8	7	6	7	7	7	2	7	5	7	4	9	8	7	6	3	6	6	6
9	6	9	7	7	9	9	9	9	9	9	9	7	1	3	9	5	9	9
6	1	7	7	7	9	3	6	2	7	3	4	4	5	3	2	7	3	2
8	1	1	4	6	1	6	9	5	7	9	9	9	9	3	6	6	5	5
9	5	9	9	9	9	3	9	9	9	9	9	9	5	7	7	7	7	7
9	9	8	8	9	6	7	9	9	9	5	9	9	5	6	8	8	5	7
9	5	8	8	9	9	7	9	9	8	5	7	6	7	7	7	4	8	8
9	5	7	9	9	9	6	6	4	9	2	8	6	5	2	7	6	5	9
9	2	8	3	9	9	9	9	7	6	6	4	5	3	2	3	5	3	1
9	3	6	6	6	6	2	9	9	6	9	9	9	6	3	4	5	2	5
9	7	7	8	9	9	8	9	6	8	2	4	2	9	8	8	8	4	6
9	4	8	6	9	7	9	9	4	7	3	6	6	3	5	6	8	8	6
9	6	8	7	6	6	9	7	9	7	6	7	7	9	9	9	7	5	5
9	5	9	9	9	9	5	9	9	9	9	4	9	1	3	3	3	5	5
9	3	9	5	8	8	8	9	7	8	7	9	9	7	8	8	9	9	9

4. Summary graphs for stage 2

- a. Mean, median, and standard deviation
- b. Agreement bins

