

# Visualizing What We Learned (A.K.A. the “In my feelings” challenge)

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Lena Suk  
The University of Texas at Austin

**Artifact type:** Assignments and Workshop

**Developed for:** Instructors of undergraduate students and program administrators for undergraduate programs

**Audience:** Faculty and program administrators who want to reflect on and assess student reflections, especially outcomes related to high-impact practices

**Time required:** Outside work and 2-hour workshop

**Method and tool:** Text analysis with Voyant

## **Description:**

The analysis of student reflection essays has become an increasingly important method to measure learning outcomes of various “high-impact practices,” such as experiential learning, study abroad programs, academic service-learning, and co-curricular professional internships.<sup>1</sup> Faculty can use reflections as a teaching tool to encourage students to examine their own learning. They can also use reflection essays as data to assess the learning outcomes related to the process, rather than just final products, of high-impact practices.<sup>2</sup> Students can also participate by comparing their own reflections to their peers’. On a programmatic level, programs can collect standardized reflection essays to assess student work from multiple courses and learning experiences. The following is a sample, optional activity for higher-ed faculty and program administrators to 1) integrate critical reflection in their undergraduate courses and 2) use a textual data visualization tool to qualitatively assess these reflections for small and large classes and varied undergraduate programs. Unlike a traditional assessment model in which administrators or faculty assess student artifacts to see how/whether pre-determined outcomes were met, the following model would provide an exploratory assessment of student outcomes, allowing students, faculty, and administrators to qualitatively analyze students’ statements on their own learning.

## **Supporting materials:**

Plan for assignments and workshop for faculty or program administrators

<sup>1</sup> See Ash and Clayton’s “DEAL Model” Ash, S. L., & Clayton, P. H. (2009). Generating, deepening, and documenting learning: The power of critical reflection for applied learning. *Journal of Applied Learning in Higher Education*, 1(1), 25-48.

<sup>2</sup> See Wurdinger, S.D. and Carlson, J.A. (2010). *Teaching for Experiential Learning: Five Approaches that Work* (New York, NY: Rowman and Littlefield Education) on the value of formative assessment, and the importance of assessing students’ process as well as product

## “Visualizing what We Learned” aka “In My Feelings Challenge”

Exploratory, Qualitative Assessment Model for Faculty and Program Administrators/Assessors  
Lena Suk

The analysis of student reflection essays has become an increasingly important method to measure learning outcomes of various “high-impact practices,” such as experiential learning, study abroad programs, academic service-learning, and co-curricular professional internships.<sup>1</sup> Faculty can use reflection as a teaching tool to encourage students to examine their own learning. They can also use reflection essays as data to assess the learning outcomes related to the process (rather than just final products) of high-impact practices.<sup>2</sup> Students can also participate by comparing their own reflections to their peers’. On a programmatic level, programs can collect standardized reflection essays to assess student work from multiple courses and learning experiences. The following is a sample, optional activity for higher-ed faculty and program administrators to 1) integrate critical reflection in their undergraduate courses and 2) use a textual data visualization tool to qualitatively assess these reflections for small and large classes and varied undergraduate programs. Unlike a traditional assessment model in which administrators or faculty assess student artifacts to see how/whether pre-determined outcomes were met, the following model would provide an exploratory assessment of student outcomes, allowing students, faculty, and administrators to qualitatively analyze students’ statements on their own learning.

### For Faculty facilitating students’ individual reflections:

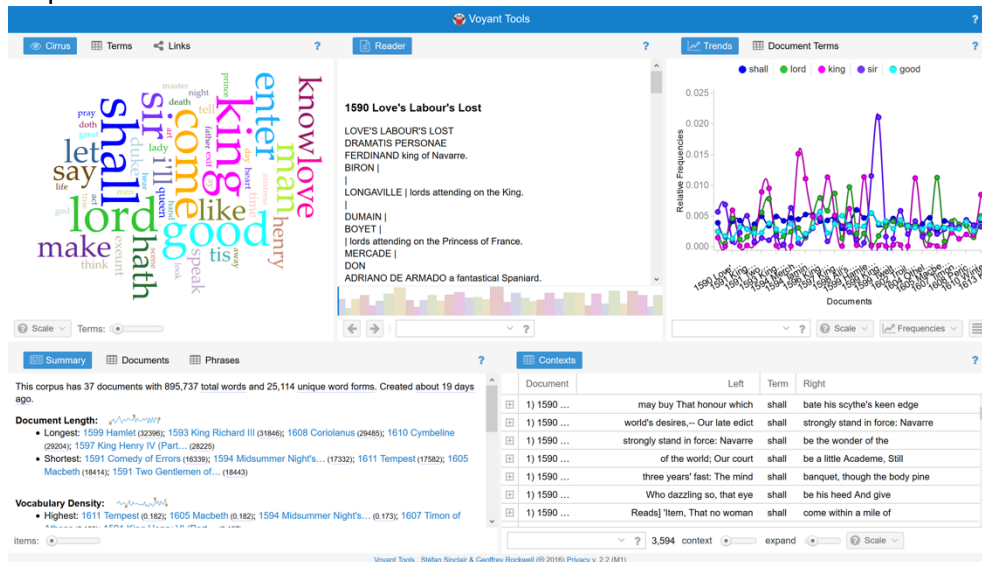
- 1) Ask your students to keep a reflection journal throughout the course, writing entries to reflect upon specified course milestones. Ask students to write these reflections in “notepad” and save each one as a .txt file. Students should save all the .txt files together in 1 folder.
  - a) To encourage quality reflections, give students set guidelines and a rubric, for example [http://earlycollegeconference.org/wp-content/uploads/2014/12/Portfolio-Rubric-for-Reflection.PRINT .pdf](http://earlycollegeconference.org/wp-content/uploads/2014/12/Portfolio-Rubric-for-Reflection.PRINT.pdf)  
Providing them with the opportunity to practice reflection in group discussions could also be helpful.
  - b) Prompts for reflection might include:
    - i) What were some of your most challenging moments of the assignment/activity/experience and what made them so?
    - ii) What were some of your most powerful learning moments of assignment/activity/experience and what made them so?

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- iii) Describe an instance in which you or your team came up with a creative solution during the assignment/activity/experience. How did you come up with a solution and what did you learn from this experience?
  - iv) Through this experience, what have you discovered about yourself – your strengths, your weaknesses, your interests?<sup>3</sup>
- 2) At the end of the semester, ask students to upload their folder, with all the .txt files in it, to Voyant <https://voyant-tools.org/>

Voyant is an open-access, web-based, easy-to-use tool for text analytics, to visualize and analyze textual data. As students upload their .txt files, they will be creating a “corpus” of their own work. They can then use the various tools within Voyant to analyze their texts as data, studying for example word frequency, distribution, or even the correlation of words with other words and topics.

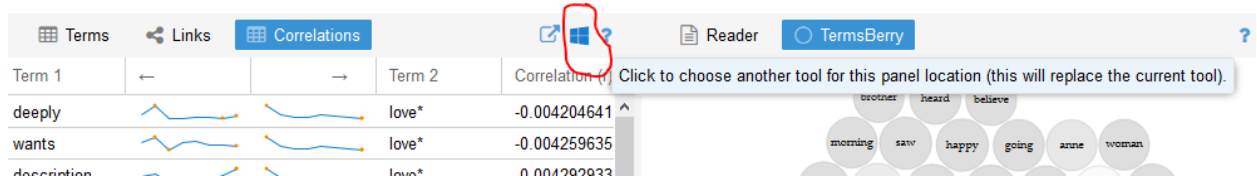


- a) You can organize a final class session in a computer lab if resources are available and size of class can be accommodated
  - b) If a large class, you could split the class into groups
  - c) You can ask students to do this on their own outside of class time, using personal laptops or directing them to accessible library devices
- 3) After uploading .txt. files, ask them to **PAUSE** for a moment. Give them time to write a summary of what they think their reflections will reveal. You can ask them similar prompts to the ones you have used throughout the semester, but ask them to reflect on the entire semester instead of just one activity/experience/milestone.
- 4) After they have written this reflection, give them time to play around with the different tools in Voyant. Students might be familiar with tools like “Cirrus,” which will generate a word cloud that measures total frequency of certain words in the corpus. But they can also explore tools like “Trends,” which will graph the frequency of words over time. “Trends” could be an interesting tool to see how their emotional states have changed throughout the course. By searching for words like “frustrated,” “excited,” or “confused,” students can see

<sup>3</sup> Prompts selected and adapted from “Wabisabi Learning” <https://www.wabisabilearning.com/blog/25-self-reflection-questions>. Accessed 7/5/2019

if these terms appear with greater frequency at the beginning, middle, or end of the semester.

- a) If students are using a tool that allows them to search for words, they should keep in mind [syntax](#)
- b) In addition, by clicking on the little blue window, students can access a host of [other tools](#), with descriptions of how they work.



- 5) After exploring, ask students to focus on a particular tool of their choice to analyze their own reflection essays. As they do this, ask them:
  - a) What tool are you using, and what does it do with text?
  - b) What does the tool reveal about what you have written in your reflection essays?
  - c) Is there anything that surprises you from the results?
  - d) How do the results compare with the reflection that you just produced about the whole semester?
  - e) What did you think you had learned, versus what Voyant is telling you about this learning experience?
  - f) What does this visual text analysis tell you about your own learning experiences/processes?
- 6) Students can produce a final essay answering the above question either before or after a group discussion of results.

### For Faculty, analyzing the entire class's reflection as a corpus

If you wish, you can take this same activity and generate a classroom-wide visualization of all the students' reflections.

- 1) Students can opt to submit their journals (with identifying information removed) to you via google drive or other file-sharing method.
  - a) You can upload the entire class's .txt files to create a class-wide "corpus" of their work.
  - b) After creating the corpus, repeat steps 2-5 above, but ask them additional questions such as:
    - i) What did you learn vs. what the collective class learned?
    - ii) What surprised you about your peers' reflections?
    - iii) How did your reflections differ from what the entire class came up with?

### For Program Administrators assessing multiple courses.

- 1) If you are program administrator who has to assess multiple courses, for example, you are coordinating a study abroad program or a college-wide experiential learning initiative, you can also replicate this activity on a larger scale. If you have faculty in your program who are on-board with the above steps, do the same as above, but ask multiple faculty to submit student reflections from multiple courses instead of just one.

- 2) Make sure that essays are de-identified and that you are following FERPA guidelines
- 3) Beyond using the data for your own programmatic assessment, you could contribute this data to provide a resource to the faculty/students who have participated. For example:
  - a. If you have a large computer lab on campus, hold a series of “showcases” at the end of the year, inviting faculty/students from your program to do steps 2-5 as an entire cohort. Make this a celebratory event with food if possible. Invite students to write short statements on a whiteboard about their results, or tweet about their results using your program’s hashtag.
  - b. If you have a blog, website, twitter or other social media account, provide a link to Voyant with the corpus available so that faculty and students can analyze the data from the entire corpus on their own class time or outside of class time.
  - c. Invite faculty and students to analyze the data and produce blog posts or other analyses and showcase these on your blog, website, or social media accounts.