Reading at Scale: Teaching with Voyant

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Artifact type: Workshop
Developed for: Professional development workshop
Audience: Instructors and graduate teaching assistants of first-year composition
Time required: One 40-minute session
Method and tool: Introduction to Voyant and various ways to use Voyant in the undergraduate classroom

Description:
This workshop was designed as part of LSU's Writing Program's Engaged Educator Distinction, an honor that UWP faculty and graduate teaching assistants (GTAs) can earn by attending or hosting professional development workshops during the academic year. From previous conversations with UWP faculty and GTAs, I understood that there was an interest in using digital tools in the composition classroom, but some UWP instructors struggled with how best to integrate these tools into their established syllabi. Voyant works as a good introduction to digital pedagogy because it is fairly simple to use and understand for both instructors and students, and has enough flexibility that one can imagine a multitude of uses for it in the undergraduate classroom. When planning the workshop, I wanted to both introduce the tool and offer examples of lesson plans that instructors can easily tweak to suit their needs, while also allowing space within the workshop for brainstorming other ideas. I also wanted to leave room for discussions of accessibility when implementing digital tools, which is why I included a brief note on browser extensions within the assignment handout and the workshop presentations. Additionally, in the workshop announcement, I mentioned that laptops were recommended, but not required. At the very least, hosting this workshop requires a space with a computer and projector so that the Voyant tool can be projected to participants. After displaying Voyant and its various tools, and introducing the example lesson plans, I opened the floor to participants so that they could share their ideas for using Voyant. Like so many professional development events that I have attended and hosted in the past, this discussion section felt like the most generative and exciting part of the workshop as a whole, as educators asked questions, brainstormed potential assignments, and made plans to collaborate. Just as is true when integrating digital tools in the undergraduate classroom, rarely ever is our goal to teach the tool; rather, our true goal is to inspire a new way of approaching a familiar problem.

Supporting materials:
Detailed outline for workshop

<u>Reading at Scale:</u>
<u>Teaching with Voyant, a Digital Humanities Tool</u>

hosted by Taylor Orgeron

<u>Workshop Description:</u>
This workshop will introduce interested UWP faculty and GTAs to a digital humanities tool called Voyant.

<u>Workshop Objectives:</u>
• Learn to use the digital tool Voyant to analyze texts
• See how Voyant offers different ways to visualize the same texts.
• Discover ways to integrate Voyant into the classroom
• Learn how to make a Voyant server

<u>Intro to Voyant: What is it?</u>

In writing and literature classes, we teach our students to gather evidence from close reading in order to support their arguments. In what ways could data visualization charts actually aid processes of reading? The visualization tool Voyant allows the user to track the relative appearance and context of specific words and phrases in a specific body of text, from a poem to an entire body of works (or corpus).

While digital tool analysis by no means replaces close reading, it can be useful to see trends across one or many works. For example, say one wished to display how many times a specific word or theme appeared in a text. While one could manually "count" references across a novel or body of texts, or attempt to estimate relative occurrence, a text analysis tool like Voyant can do this for you. Additionally, this tool can also help students in first-year composition see their own trends in word frequencies, so that they can make their essays more stylistically diverse.

<u>Intro to Voyant: How do I use it?</u>
Before I give you some examples for what kinds of class assignments you can do with Voyant, I'll show you how it works and what it can do.

1. Voyant can be accessed at https://voyant-tools.org/
Note: The companion site Voyant Tools Documentation offers a fantastic, step-by-step exploration of Voyant's various tools: http://docs.voyant-tools.org/start/

2. Upload your chosen text (or texts) in one of three ways: pasting the contents into the text box, pasteing a set of URLs (one per line) or upload documents (plaint ext, HTML, XML, PDF, RTF, MS Word, or a zipped folder of files). Voyant also includes 2 pre-uploaded corpora: Shakespeare's plays and Jane Austen's novels.

3. The default view is five tools that interact with each other. They are (clockwise from top left):

- Cirrus: a simple word cloud that displays the highest frequency terms in the corpus (that aren't in the stopwords list*) *A stopwords list is a list of common words (like "The" and "and" that aren't necessarily useful for analysis, and that you want the program to ignore when counting word frequencies.
  - o The word cloud positions the words such that the terms that occur the most frequently are positioned centrally and are sized the largest. (The color is random)
  - o Hover over each word to reveal the count in the corpus
  - o Use the scale at the bottom of the tool to limit the word cloud to only specific texts in your corpus
  - o Click on the question mark in the upper right corner for help, and hover just left of the question mark for options for embedding or downloading an image of your results.
  - o Clicking on words in Cirrus will usually cause one or more other tools to react

- Reader: a infinite scrolling reader for the actual text in the corpus (this fetches the next part of the text as needed)
  - o Can toggle between corpus and individual documents

- Trends: a visualization of word frequency across the corpus (or it can be re-launched for word frequency within each document)
  - o Can toggle between corpus and individual documents
  - o You can add more terms by using the search box – simply type in a term and hit enter
  - o You can eliminate defaulted high frequency words by clicking on them (try de-selecting all and just adding "man" and "woman", "girl" and "boy")
  - o You can click the "Reset" button to return to the defaults for the tool

- Contexts: shows each occurrence of a keyword with a bit of surrounding text (the context). It can be useful for studying more closely how terms are used in different contexts
  - o You can specify which keyword to use by typing a query into the search box and hitting enter
  - o You can adjust how many words appear on either side with the 'context' slider and how many appear on the expanded view with the 'expand' slider

- Summary: a high-level summary of data from the corpus

4. Some of the boxes have additional tools available in tabs. There are also lots more tools available that you can swap into your interface (or 'skin). They're listed here: http://www.voyant-tools.org/docs/#!/guide/tools

5. Practice choosing a tool that isn't listed as a default. Hover in the top right corner of one of the boxes, click on the Replacement (four squares) box, and then select another of the tools from the menu that pops up.

What can you do with it?

Now, let's talk about different classroom and take-home activities you can do with Voyant.

But first, a quick note on accessibility. Because the visualization graphs color code data, instructors with students with colorblindness should use a Google Chrome extension Color Enhancer https://chrome.google.com/webstore/detail/color-enhancer/ipkjmjaledkapilfdigkgfmpekpfnkih or the Firefox extension Midnight Lizard https://addons.mozilla.org/en-US/firefox/addon/midnight-lizard-quantum/?src=featured

Instructors who use Google Chrome may also want to use the extension Zoomy https://chrome.google.com/webstore/detail/zoomy/jgfonhdeiaaflpgphemdgfkjimojblie?hl=en to enlarge certain sections of the screen for visually disabled students.

Example Lesson 1. Analyzing a corpus of work (quick in-class activity for exploring course themes)

You would like to explore the context in which particular words are used throughout an entire corpus. Do particular names and nouns occur around a particular verb? Is a word often described positively or negatively? What about the term 'freedom'? Is it being used in the political sense of the struggle for freedom? Or in the context of purchasing freedom for the author or another?

1. Type 'freedom' into the 'Contexts' search window. You may also want to click and drag on the borders between tools to make the context window larger.

2. Examine the 5 words immediately before and after 'freedom.' Want to see a little more of the context? Select the 'Context' slider and move it to 10. Through this interface, you can read every instance of the word 'freedom' throughout the entire corpus.

3. Click on the '+' button on the left to see the word in expanded context. The amount of text here can be increased with the 'expand' filter.

4. Click on the 'Export' button the appears when you hover over the question mark. Select 'Export Current Data' -> 'export current data as tab separated values (text).' This will bring up a window where you can hit Cntrl/Cmd+a to select everything and copy and paste into Excel. You can conduct further analysis on this new corpus composed of only text in the immediate vicinity of a given word.

5. Write a paragraph analyzing the context of "freedom" based on this data.

Example lesson plan 2. Students analyzing their own work

Common problem in student writing: the difficulty in stating a clear thesis and then staying focused on that thesis throughout the paper. Could looking at word clouds and graphs of word frequencies help students to visualize the actual (rather than implicit or imagined) topics of a paper and their appearance and disappearance in different sections?

First, have students upload their papers to Voyant. If they have multiple revisions of a paper, all the better, as it allows a comparison of the iterations of their writing. After setting the stop words and exploring the different word frequencies of their own work, students should then trade and look at a peer's work. This switch allows the students to avoid being biased by what *they* think the paper is about and instead focus on what Voyant shows.

Instructions For Students:

1. Download the file containing your essay.
   Go to https://voyant-tools.org/
2. Upload the file via the "Upload" link.
3. Hit "Reveal".
4. Explore various word frequency combinations to see if the most common words in your paper match your thesis, to see how different, important words vary in frequency throughout the paper, and how word combinations appear (or do not).
5. Have a peer look at the graphs you've created and see if they can determine the main topics of your paper from them. Trade places with your peer; explore one another's texts using Voyant to see if you can get an idea of the paper's thesis and how the argument progresses without reading the paper.

Other lesson plan ideas ideas:
1. Have them enter a collection of potential paper sources, and then have Voyant generate possible keywords to use in further searches using the Cirrus word cloud.
2. Have students look for trends in word frequency and topics concerning a singular subject by uploading articles about that topic to Voyant, then analyze the rhetorical context of these words

What other uses might you suggest for Voyeur? Are there other questions you think I could pose for students as they use this tool to analyze their own writing? Do you know of other tools that might be useful for this exercise?

One last note: Server

Voyant currently exists as both a web-based tool (voyant-tools.org) and as a Java application you can run on your own machine. The web interface often gets overwhelmed, especially when running a workshop.

Voyant with group of more than 10ish it will start to crash, so you may have to use a server instead (sometimes the server won't work either, perhaps have half of the class should use the web version and the other half uses a server version) http://docs.voyant-tools.org/resources/run-your-own/voyant-server/