

Introduction to Data-Driven Learning Lesson Plan

General Information	
Lesson Title	Introduction to Data-Driven Learning
Class/Student Information	<ol style="list-style-type: none"> upper-level undergraduates in an ecology or physiology course OR multi-major undergraduates in an introductory or advanced technical writing course OR multi-major graduates in a writing-intensive course
Length of Class/Activity	22 mins
Overall Instructional Goal	To teach students how to use AntConc to analyze data and recognize near synonyms.
Lesson Objectives	<ul style="list-style-type: none"> Identify and analyze near synonyms common to technical and professional writing. Practice using the AntConc to load datasets, generate and sort concordances, and apply the wildcard operator. Identify the three data sets used during the DDL instruction.
How will you measure each objective?	<ul style="list-style-type: none"> The in-class activities (included in the presentation slides) measure if students can perform basic functions in the AntConc text processing tool. The in-class activities measure if students can identify near synonyms. The homework assignments measure if students can (a) identify differences in how near synonyms are applied across registers and (b) independently use AntConc to analyze data.
Justification for Lesson	Students need to understand how to use a text processing tool in order to explore any language pattern. The lesson uses the topic of near synonyms to facilitate this demonstration with this (likely) new technology.
Materials	<p>You will need access to the following –</p> <ol style="list-style-type: none"> This file, which outlines the lesson. Presentation slides for the Orientation, Presentation, and Engagement stages (URL linked in Canvas). Homework file for the Expansion stage (DOC file linked in Canvas). Fact sheet for the Expansion stage (URL linked in Canvas). <p>In addition, students will use AntConc and the Professional Writing data set for this unit.</p>

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<p>Orientation (5 min.)</p> <p>Before the lesson begins, ensure that AntConc and the Professional Writing data set are loaded on the computers. (NOTE: Data sets will be housed in the My Documents folder of TECM lab computers).</p> <p>Display Slide 1 of the presentation slides as students enter the lab or as you orient students to the lesson (see below).</p> <p>Tell students: "Over the course of the semester, we'll analyze language patterns with a text processing tool called AntConc and three different datasets of professional language. The purpose of this type of instruction is to get you to recognize how expert (or published) writers communicate in general as well as in your individual disciplines.</p> <p>The patterns you observe and learn are also patterns you can apply to the writing for this and your other courses.</p> <p>AntConc is already loaded on your desktop (see the ant icon), and the three datasets are in the My Documents folder of your computer. Your Canvas section also includes a download link for AntConc for PC and Macs (it's free) as well as the three data sets. You'll occasionally work with these data sets outside of class for homework, and I think you'll refer to them as you are drafting writing assignments.</p> <p>The value of a data-driven approach to learning is that you can discover patterns that inform and improve your own writing. Likewise, observing (and then applying) writing patterns from experts in your discipline helps you acculturate into that discipline.</p> <p>Let's begin. Before we do anything with the technology, write down a sentence that includes any form of the verb to <i>cause</i>."</p>	<p>Don't load the Professional Writing data set into AntConc before the lesson begins as students need to understand how to do this themselves. For future lessons, you can preload the data sets.</p> <p>Orient students to where AntConc and the data sets are located on their UNT lab computers. You may even take a few seconds to let students click on the My Documents icon and/or the data set folders so they can familiarize themselves with the types of materials that they will work with.</p> <p>Let students also know that all these files are available in your Canvas section because they will be occasionally using these materials to complete homework.</p> <p>Allow students time (about 60-90 seconds) to write their <i>cause</i> sentence. Make students physically write (or type) the sentence (rather than think of a sentence). Tactile approaches are important to data-driven learning.</p> <p>Before you solicit students for example sentences, write <i>CAUSE</i> on the whiteboard or in a Word document. As students read their sentences, write negative words to the right of <i>CAUSE</i> and positive words to the left (you could also use different colored markers to contrast the positive from the negative words). Ask for 3-5 example sentences. Typically, the majority of the words should have negative associations, including words like <i>error</i>, <i>accident</i>, <i>failing</i>, <i>global warming</i>, and <i>threaten</i>. Context often matters. For example, a word like <i>teenager</i> is often associated with negative adjectives like <i>annoying</i> or <i>naïve</i>.</p> <p>If a majority of the example sentences are associated with negative words/ideas, ask the class for a show of hands of how many of their sentences had words associated with negativity. This generally lessens the anxiety associated with this activity and other students will then likely volunteer words they included. Accepting these responses and evaluating them will encourage participation for the rest of the unit.</p>

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<p>Transition</p> <p>"Okay, it appears that <i>cause</i> is associated with negative words or ideas, such as [include some of the example words you wrote down on the whiteboard]. Let's use AntConc and a data set of professional writing to test this hypothesis. Everyone click on the ant icon on your Desktop to open AntConc and we can conduct a simple search."</p> <p>Transition to Slide 2 of the presentation slides.</p>	
<p>Presentation (5 min.)</p> <p>[The following will display on Slide 2 of the presentation slides]</p> <ol style="list-style-type: none"> 1. Load the Professional Writing data set into AntConc. 2. Search for the word cause. How many hits do you retrieve? 3. What do you retrieve when you search for caus* instead? What does the * represent? 4. Sort the concordance for caus* by 1R/2R/3R. What nouns tend to follow cause? 5. What can you conclude about the use of cause? What are some alternative words? 	<p>This activity is designed to teach students how to use the basic functions of AntConc as well as test the <i>cause</i> hypothesis you formed in the Orientation stage.</p> <p>Guide students through the steps of loading the data set into AntConc and using the search function. Stop after each step and orient students to (a) what you're doing with the technology and (b) explain the resulting output.</p> <p>Watch the YouTube tutorial on how to do the <i>cause</i> activity in AntConc: https://www.youtube.com/watch?v=VQ1e01D51xM</p> <p>The instructor key is listed below.</p> <ol style="list-style-type: none"> 1. Load the Professional Writing data set into AntConc. 2. Search for the word cause. How many hits do you retrieve? 178 3. What do you retrieve when you search for caus* instead? What does the * represent? 764 hits, * shows all forms of cause 4. Sort the concordance for caus* by 1R/2R/3R. What nouns tend to follow cause? e.g., constraint, death, failure, famine 5. What can you conclude about the use of cause? What are some alternative words? Used as a negative, alternates include lead to, produce

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<p>Transition</p> <p>"Overall, we see that <i>cause</i> is associated with negative words and ideas, such as <i>death, famine, and destruction</i>.</p> <p>When we listen to the news, we often hear how accidents and other tragedies were <i>caused</i>. When we read instructions, we often learn how misusing a product or equipment might <i>cause</i> a negative outcome.</p> <p>You all did a great job of identifying alternates to <i>cause</i> if we were trying to communicate something that was more positive or at least neutral.</p> <p>Let's do a second activity, but this time with the near synonyms <i>probability</i> and <i>likelihood</i>."</p> <p>Transition to Slide 3 of the presentation slides.</p>	
<p>Engagement (3 min.)</p> <ol style="list-style-type: none"> 1. Search for probability. How many hits do you retrieve? 2. How could you use the * to also retrieve plural forms of probability? Sort by 1L/2L/3L. What adjectives tend to precede probability? Search for likelihood and then sort it by 1L/2L/3L. What adjectives tend to precede? 3. How would you describe the meaning differences between probability and likelihood based on the adjectives that occur with these two words? 	<p>Display the instructions on Slide 3 for students.</p> <p>Let them work through this activity on their own but prompt them to write down their findings as they complete the activity.</p> <p>As students work, walk around to the classroom to help them stay on task and to troubleshoot technology issues. The RA can also help troubleshoot technology issues and answer individual questions on this activity.</p>
<p>Evaluation (5 min.)</p> <ol style="list-style-type: none"> 1. Search for probability. How many hits do you retrieve? 155 2. How could you use the * to also retrieve plural forms of probability? Probabilit*, 200 hits Sort by 1L/2L/3L. <p>What adjectives tend to precede probability? Choice (line 11), failure (Lines 20-26), high (Lines 28-31), subjective (Lines 98-105)</p> <p>Search for likelihood and then sort it by</p>	<p>After 5 minutes (or less, if students are finished), discuss the answers with the entire class. The instructor key is in the left column.</p> <p>Watch the YouTube tutorial on how to do the <i>probability/likelihood</i> activity in AntConc: https://www.youtube.com/watch?v=C__fVgOWFk0</p> <p>Choose how to lead this discussion. For example, you could stand in front of the class and facilitate responses as the RA types the search terms into AntConc. Conversely, you could engage with the technology yourself and enter the search terms as you facilitate the discussion. Students will often</p>

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<p>1L/2L/3L. What adjectives tend to precede? 92 hits, greater (Lines 6-13), maximum (Lines 18-23), reduced (Lines 28-30)</p> <p>3. How would you describe the meaning differences between probability and likelihood based on the adjectives that occur with these two words? In non-technical writing, likelihood is usually a synonym for probability, but in statistical usage there is a clear distinction in perspective: I like to remember that probability refers to possible results, whereas likelihood refers to hypotheses.</p>	<p>type the search terms into AntConc as you review them, so the RA can also walk around the lab to ensure students are not having technology issues. It's your choice.</p>
<p>Summary Statement(s)</p> <p>"You found some interesting findings. This is an example of the language patterns we will explore throughout the semester. Some of these patterns will be new to you, others you might have learned in previous courses. Part of the value of what we're doing here is that we're looking at how professional communicators actually use language rather than what textbooks tell you to use. Sometimes that information conflicts, and it's important that you recognize and identify these variations, especially since one of the purposes of this course is to prepare you for the workplace."</p>	
<p>Expansion (4 min.)</p> <p>Tell students there is a brief homework assignment associated with this lesson, which they can find linked on Canvas (as a Word document).</p> <p>The homework should only take 15-20 minutes to complete, but the second activity will require students to download AntConc and work with the Professional Writing data set. Make sure students know where these files are stored in the Canvas section.</p> <p>Refer students to the Fact Sheet for this task. Students can consult this sheet when working on homework and assignment drafts. This Fact Sheet includes instructions on how to perform the basic AntConc functions (e.g., loading a data set as well as using the search, wildcard, and sorting functions).</p>	<p>The first homework assignment was designed to measure if students can identify how near synonyms are used differently across registers.</p> <p>The second homework assignment was designed to measure if students understand how to use the basic features in AntConc.</p> <p>The Fact Sheet for this unit should provide students with all the information they need to complete the homework.</p>