Evaluating and Contextualizing Authority with Data

Data **LITERACY**

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Framework Alignment (see page 11)

Activity Rationale

It is important to understand where information and data come from—their context—to determine their level of authority. Authority is often constructed and contextual. This refers to the idea that information resources are drawn from their creators' expertise and credibility and are evaluated based on the information needed and how it will be used. Critically examining an information source helps you to evaluate, ask questions, and consider both the credibility of the source's origins and its suitability for your information needs.

Activity Description

In this activity, students learn how to determine the authority of an information source. They examine different sources of information that all use the same dataset. Students define each source's type of authority and recognize the context in which the data are being used. Students learn to consider the source of authority for various information sources, and understand the ways that information sources with different levels of authority can base their credibility on the same dataset. Students will also learn that this concept is not limited to the information sources shown during this activity and that this concept of textual authority extends to all information sources they will encounter.

NOTE: This activity was designed to use the examples from the news and associated FRED® data provided, but you can also substitute your own examples and/or FRED® data that best fit your teaching objectives.

You may want to consider the publication dates of these examples (Spring 2021) and update them to more current tweets and the most current jobs report data depending on your time frame for this activity. These examples where chosen because we felt they represent both a range of perspectives on the topic at hand and a variety of news formats. To align with the Authority is Constructed and Contextual frame, we chose examples with a variety of levels and types of authority—government information (press releases), news articles, editorials, and

tweets—so that students could evaluate the authority of both formal and informal sources. If you choose to use different examples, we suggest you choose examples with different types of authority and/or context and ensure that there is an appropriate dataset or datasets in FRED® for students to analyze.

Grade Level

High School, College

Objectives

Students will be able to

- recognize that different types of authority (subject expertise, public office, first-hand experience) are presented in various media types,

- describe the type of authority for a news item,

- compare and contrast the authority of several sources of information,

- recognize the responsibility of developing their own authoritative voice, and

- articulate the context of a given source within the information ecosystem.

Compelling Question

How do you assess the credibility and authority of different sources of information when all of them use the same data?

Time Required

50 minutes

Materials

- Slide deck: Includes instructions and data sources for two exercises

- Handout 1, two copies for each student (one each for the two exercises) or electronic access to the handout

- Handouts 2 and 3, one copy of each for each student or electronic access to the handouts

- Internet access

- Computer, tablet, or phone for each student or group of students

- Padlet, Poll Everywhere, Mentimeter, Slido, or other free word cloud generator; OR a whiteboard and marker; OR index cards or sticky notes

- Index cards or half sheets of paper, one for each student to use as an exit ticket

- Optional: Chart paper, markers, and tape for each group of students (for a gallery walk)

Procedure

1. Start by asking students the following:

   - How do you define the word "authority"?

     o Instruct students to write their answers using an interactive presentation tool of your choice (e.g., Padlet, Poll Everywhere, Mentimeter, Slido, etc.) to share the anonymous responses on a projected or shared screen in the form of a word cloud or similar.

     o Alternatively, you could ask students to raise their hands to answer aloud so that you can write their answers on a whiteboard; or, instruct students to write down their responses on index cards and collect the responses for you to read aloud.

2. Explain that information has authority and that different sources of information have different degrees of authority by discussing the following:

   - The authority of an information resource is based on its creator's expertise and credibility.

   - Expert consumers of information must view authority with a healthy attitude of informed skepticism and openness to new perspectives, voices, and ideas as it pertains to their information needs.

   - Provide students with enough context about this information concept so that they can easily participate in later activities.

3. Discuss the following, using the same method of collecting responses as you did for the first discussion question:

   - Where do you go to find information? (*Answers will vary but may include*

     o *Social media [Facebook, Twitter, etc.]*

     o *The internet [Google, other search engines]*

     o *Friends/family/teachers*

     o *TV news*

     o *Newspapers*

     o *Libraries*

     o *Government information sources*

     o *Journal articles/databases*)

   - Where do you look for information when doing schoolwork or asking a question?
     (*Answers will vary but may include*

     o *Schoolwork: the library; teacher or librarian; the internet [Google, other search engines]; news sources [social media, TV news, newspapers]; journal articles/databases*

     o *Asking a question (depends on the question!): social media; government information sources; the library; the internet [Google, other search engines]*)

4. Display slide 1. Explain to students that they'll walk through an exercise as a class in which they'll evaluate the credibility and authority of four different sources of information, all of which use the same dataset.

5. Display slide 2. Distribute two copies of *Handout 1: Evaluation Rubric* and one copy of *Handout 2: Rubric for Authority is Constructed and Contextual* to each student, or direct students to a link where they can view and refer back to the handouts online.

6. Display slide 3. Show students the FRED® dataset "State Minimum Wage Rate for Pennsylvania" and click the link to view it from the FRED® website. Explain that the source of these data is the U.S. Department of Labor and that FRED® is the data aggregator. Explain that these data are available for each state and that students are focusing on Pennsylvania because of the news sources used for example 1 (slide 4). This will give students the minimum wage data referenced by each of the news sources in the example and will serve as a starting point for Exercise 1.

7. Explain to students that credible sources of information should be able to base their claims on concrete, citable data, such as the minimum wage information presented here.

8. Display slides 4-7, which show examples 1-4. Click on each of the links to view the information sources, and demonstrate how to use the six criteria on Handout 1 to evaluate the various news sources that utilize the same data. Reference Handout 2 to determine how to score each criterion. Explain that each information source has a different type of authority even though they are all referencing the same minimum wage data.

9. Walk through the four information sources in example 1 so that students can gain an understanding of how to use Handouts 1 and 2.

10. Explain that the "jobs report" mentioned in the news sources for Exercise 1 is a report that aggregates data from several Bureau of Labor Statistics releases. For this reason, we must look at more than one graph in FRED® to understand the data that these news sources are referencing.

11. Use the possible rubric grading for the sample sources listed below to review the process with students. Note there are no objectively "right" or "wrong" answers, as the students will be learning to evaluate information based on the Authority is Constructed and Contextual framework.

    - Governor Tom Wolf tweet
        - Context score: 4 (could also argue for 3)
        - Voices score: 3 (singular POV, which makes sense for Twitter)
        - POV score: 5 (strong POV; as the governor, it's his job to advance his agenda)
        - Accuracy score: 4
        - Audience score: 3
        - Reputation score: 4

- NPR article
  - ○ Context score: 4
  - ○ Voices score: 4
  - ○ POV score: 3
  - ○ Accuracy score: 4
  - ○ Audience score: 3
  - ○ Reputation score: 4

12. Display slide 8. Explain to students that for the next exercise they will practice evaluating the credibility and authority of four additional information sources that use the same datasets (working either alone or in groups, depending on your class size). Mention that the source of the data is the Bureau of Labor Statistics and that the data aggregator is FRED®.

13. Emphasize again that the report mentioned in the news sources draws from multiple data sources, so students will need to analyze several datasets instead of just the one in the example.

14. Display slide 9. Assign students to groups or allow them to make their own. Distribute a copy of *Handout 3: Activity and Data Sources* to each student, or direct students to a link where they can view and refer back to the handout online.

15. Review the Exercise 2 instructions on the slide and on Handout 3. Display slide 10, briefly showing students the two datasets for this assignment. Explain that students will analyze them and the associated information sources in their groups or on their own.
    - Total Nonfarm Private Payroll Employment https://fred.stlouisfed.org/series/NPPTTL
    - Unemployment Rate (Seasonally Adjusted): https://fred.stlouisfed.org/series/UNRATE

16. Display slides 11-14, which show examples A-D in Exercise 2. At this point, students can begin working on the activity, either on their own or in groups. Answer any questions students may have about using the handouts to complete the work.

17. Give students a 5-minute warning to wrap up their work before the activity ends.

18. Invite students to present their evaluation scores and reasoning through a brief summary. Options for this activity include using the same method of collecting responses as used for the earlier discussion questions, asking students to present aloud, or instructing students to write up and display their ratings on chart paper to share with their classmates through a gallery walk.

19. Review the key elements of the activity with the following discussion:

    - What are some different types of authority? (*Subject expertise, public office, first-hand experience*)

    - What type of authority might a college professor have? (*Subject expertise obtained from studying a topic in graduate school or conducting scholarly research about the topic*) What about a news reporter? (*Subject expertise obtained by repeatedly reporting on a topic or "beat"*)

    - What are some criteria that might be used to assess the credibility and authority of different information sources when the sources are using the same data? (*Who's supplying the information? Whose voice is being left out? Whose point of view is being expressed? Is the information accurate and valid?*)

    - Context is important when it comes to the information sources you consume, especially those that contain data. Understanding the data cited in these information sources is crucial.

    - Each of us has a responsibility to develop our own authoritative voice. Eventually you'll develop your own authoritative voices by continuing to evaluate and examine the authority of the information around you.

20. Give students a few minutes to draft their own tweets on the data they reviewed. Instruct students to consider their own authoritative voices—by citing other people's work, other data series, etc. Have them share their tweets with their small groups or the entire class.

Assessment

21. Distribute an index card or a half sheet of paper to each student. Instruct them to complete a check-out/exit activity by writing a two- to three-sentence summary explaining what is meant by "Authority is constructed and contextual." Collect responses as they leave the class.

22. Use the exit tickets and students' work on the activity to assess whether they met the objectives of the activity.

Handout 1: Evaluation Rubric

When evaluating information that contains data, use a variety of criteria to determine the context around the source and how it plays a role in granting authority. Evaluating a source will also help you determine whether it meets your information need. Ask yourself the following questions when evaluating an information source:

Context score	**Voices score**	**Point of view score**
Who is supplying the information?	Whose voices (if any) are being left out of the conversation?	What point of view is the source bringing to the topic?
( )	( )	( )
Accuracy score	**Audience score**	**Reputation score**
Is the information accurate and valid?	Who is the intended audience?	What are the source's credentials and reputation?
( )	( )	( )
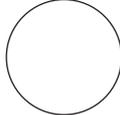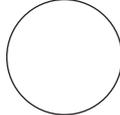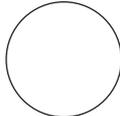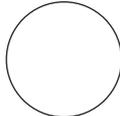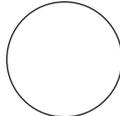
Add your score to the circle for each of the above criteria.

1 Poor   **2 Fair**   **3 OK**   **4 Good**   **5 Excellent**   **Total score:** _____

What is the source trying to say?

_____

_____

_____

Do the data support or contradict the source's message?

_____

_____

_____

What is the source's purpose in writing this piece?

_____

_____

_____

Is the source successful in communicating the data?

_____

_____

_____

Handout 2: Rubric for Authority is Constructed and Contextual

Students: Use this rubric to evaluate the activity's examples. Score each example on the Evaluation Rubric (Handout 1).

	Authority of Sources
5 Excellent	The source's given context and audience are clearly defined. The source's author acknowledges any limitations regarding the data. The source's data are accurate and valid, and the author's credentials are clearly visible.
4 Good	The source's given context and audience are clear to the reader. The data are valid and the author's credentials are acknowledged.
3 OK	The source occasionally describes the context, but the intended audience is unclear. The source mostly reflects a single purpose/bias/intent. The author's credentials are hard to find.
2 Fair	The source provides little or no discussion regarding the context for the data. The source mostly reflects a single purpose/bias/intent. The author's credentials are not clear.
1 Poor	The source provides no discussion of context as a way to present the data. The source reflects a single purpose/bias/intent from an author whose credentials are missing.

Handout 3: Activity and Data Sources (page 1 of 2)

Students: Work through the following steps to learn how to evaluate the authority of information sources that use data. You may work alone or with a group. Take some time to review the provided examples A-D. Then, as a group, use the Evaluation Rubric (Handout 1) to help record your evaluation and complete the activity. One member from each group should be prepared to share the group's final evaluation scores and reasoning to the class.

1. Look at the four examples provided. Each is an information/news source. While they are different media types, all of them refer to the same dataset available through FRED®. For this activity the data are Total Nonfarm Employment Payroll data and Unemployment Rate (Seasonally Adjusted). (NOTE: These data are aggregated and made available through FRED®. However, the data are produced by Automatic Data Processing, Inc. and the Bureau of Labor Statistics. (See source below the FRED® graph.)

2. Use the Evaluation Rubric to score each information/news source on the six criteria: Context, Voices, Point of View, Accuracy, Audience, and Reputation.

    •   **Context:** Is it clear who is supplying the information?

    •   **Voices:** Does the information/news source attempt to address any communities or groups who are left out of the data?

    •   **Point of view:** Is it clear what the information/news source's point of view is? Are they an academic, politician, concerned citizen, etc?

    •   **Accuracy:** Can you easily determine that the information/news source is presenting accurate and valid information? Do you have concerns about their accuracy with using the data?

    •   **Audience:** Is it clear who the intended audience is? Is the information/news source intended for a general audience or a specific community?

    •   **Reputation:** Can you verify the information/news source's credentials? How are they using their authority to present the data?

3. If you finish early, use the additional four questions at the bottom of Handout 1 to help you evaluate the information/news source even further.

4. Add up your total score for each information/news source.

5. Present your final scores and a brief summary of how you came up with them to the class.

Handout 3: Activity and Data Sources (page 2 of 2)

Data for this exercise: Monthly Employment Situation Summary (a.k.a. "The Jobs Report")

FRED® Data for this example

Total Nonfarm Private Payroll Employment: https://fred.stlouisfed.org/series/NPPTTL

Unemployment Rate (Seasonally Adjusted): https://fred.stlouisfed.org/series/UNRATE

Information sources

1.   Tweet: https://twitter.com/KEBroady/status/1400820960484339719

2.   Bureau of Labor Statistics Economic News Release—Employment Situation Summary (May 2021): https://www.bls.gov/news.release/empsit.nr0.htm

3.   *New York Times* article: https://www.nytimes.com/2021/06/04/business/economy/jobs-report-may-2021.html

4.   Tweet: https://twitter.com/AZGOP/status/1400916560697458690

Framework Alignment

ACRL Framework: Authority is Constructed and Contextual

Information resources reflect their creators' expertise and credibility and are evaluated based on the information needed and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information needed may help to determine the level of authority required.

Knowledge Practices

• Define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event).

• Recognize that authoritative content may be packaged formally or informally and may include sources of all media types.