

CRITICAL THINKING ASSIGNMENT MODULE TWO

Critical Thinking Lesson Plan

Annelies de Groot

Colorado State University Global Campus

OTL 545
Dr. Aime Black
May 24, 2024

Unit Background

The lesson described in this assignment cannot, in good consciousness, be submitted in a vacuum. A Lesson plan from OTL 539 on Backwards Design is below to provide context for the Unit this lesson is in. This Lesson Plan has been edited to include additional details regarding assessment from OTL 547 and information required/focused on for this assignment. Many resources were used to provide context and design decisions that may not be cited within the lesson plan itself, but nonetheless were fundamental to the creation of the lesson plan. This Unit is designed around an 18-week Semester, three 40-minute classes per week (54 class). The general structure is one class introducing a new idea and applying it with exercises, one class applying it to an advanced level with discussion, and one work day that focuses on collaboration, application of concept, and troubleshooting. The Unit focuses not just on building comfort with research methods and skill in academic paper writing, but on critical thinking and the development of “IDEAS” (inquiry, design, evaluation, argument, and systems analysis” (Silver et al., 2022).

Current Lesson

This Lesson is midway through the Unit. The Unit focuses on understanding authority, identifying research questions, and identifying authoritative/valid resources for the first third. The second third is focused on critically analyzing the sources and developing connections to support a thesis statement, and the third section of the unit focuses on further making connections and advanced/academic writing. This lesson is focusing on developing higher-order thinking skills such as analysis and evaluation that will lead to synthesis (Rohland, 2023). This lesson is also designed to support the students’ development through the constructivist lens of inquiry and towards a more transformative lens, “transformative learning can be regarded as a developmental and transformational process of individuals where the individuals’ prior knowledge or schemes are used to interpret and construct a new meaning and understanding of a word or action. (Sahin & Dogontay, 2018)”.

One difficulty in teaching through discussion is ensuring student engagement. Students with “personal qualities such as lack of initiative, low motivation, low activity, lack of independence” tend to

develop critical thinking skills at either a slower pace, or to a lesser degree (Morozova et al., 2022b). Providing a learner agency with options of discussion topics, choice of resource/reference for the discussion, and applicable examples, allow for students to become personally involved in the learning process. It is also important to touch on previous discussion topics and critical thinking skills in order to further support skill development, as developing critical thinking skills requires modeling, sequential development of skills, reiteration, and application (Brown, 2020).

Assessment

The teacher is using an LMS that incorporates teacher-facing notes and student-facing feedback for each lesson that is used in response to formative assessments throughout the lesson. A foundational goal for the discussions is to foster an environment of collaborative learning, open-mindedness, challenging inquiry, and more adult communication: “We have to get kids to think smartly and critically, to not be so married to their initial gut reaction, to be open to proving themselves wrong. We need to create a space where kids are learning how to listen to understand, to speak to be understood, and to disagree without being disagreeable.” (Laskowski, 2023). Students’ approaches in discussions will be assessed not through the accuracy of their statements, but in their ability to listen, assess, address, and integrate other points of view, as through critical thinking students “devise specific questions that need further contemplation, and brainstorm relevant examples that help illuminate the material. Additionally, they use exploratory and imaginative methods that are conceptual in nature and do not typically yield right and wrong answers. (Vejar, 2021)”. Projects and more quantifiable assessments are provided throughout the unit

Homework assigned

Khan Academy videos (Growth Mindset, Unit 2, one section per week) are assigned through the Unit to help develop students’ awareness of how they can continue to have an open mind during a discussion and analysis, and to help identify their growth throughout the course. Additional assignments include researching certain topics, developing an annotated bibliography, developing a presentation, analysis of research papers/scientific papers, analysis of arguments, etc.

UbD Lesson Plan for “Why Use Fake News” Unit

Stage 1 – Desired Results	
Content Standard(s): Ninth / Tenth Grade Band, Standard 4. <i>Research Inquiry and Design - Synthesize multiple, authoritative literary and/or informational sources, creating cohesive research projects that show an understanding of the subject.</i>	
Understandings: Students will understand that... <ul style="list-style-type: none"> <i>The credibility of your source impacts the validity of your argument and research.</i> <i>Valid sources should influence and support your thesis, not simply prove your point.</i> 	Essential Questions: <ul style="list-style-type: none"> <i>What does “authority” mean in terms of research, and why is it important?</i> <i>What comes first, the thesis or the research?</i>
Student objectives (outcomes): Students will know and be able to... <ul style="list-style-type: none"> <i>Define “authority” in a concrete, applicable manner as it regards to research</i> <i>Identify credible resources and explain why they are important</i> <i>Demonstrate how resources are used in conjunction with a thesis</i> <i>Confidently research unbiased support</i> 	Students will build relationships by... <ul style="list-style-type: none"> <i>Having Socratic conversations with their instructor regarding the concept of “authority” and “credibility”</i> <i>Researching support together</i> <i>Exploring concepts of bias and thesis support</i> <i>Building a rubric together collaboratively</i>
Stage 2 – Assessment Evidence	
Performance Task(s): “GRASPS” “Develop an annotated bibliography of twelve credible resources and build an outline for a research paper from your sources.” <ul style="list-style-type: none"> <i>As a researcher (R), the student will explore the concept of “authority”, craft a thesis, and identify credible sources to be presented in an annotated bibliography and research paper outline (P). These products will be used to develop a research paper later in the semester.</i> <i>The student will work one-on-one with their teacher to explore the concepts of authority and credibility, identify appropriate research sources, and develop analytical skills (S). Students will also need to become aware of their own biases, previous approaches to research, and goals in order to expand their understanding and application of credibility (G) (R). The student will also independently complete the research, analysis, and outline while keeping a journal on their progress (S)(St/C).</i> <i>The project will be guided by a rubric created collaboratively between student and teacher, which will be edited throughout the project (St/C).</i> 	

<ul style="list-style-type: none"> <i>In order to demonstrate understanding of the importance of wise use of credible sources in research, how they relate to essay construction, and how the validity of information is valuable (G), the student will consider their classroom peers and teacher as their audience, choosing sources and format effectively (A).</i> 	
<p>Self-Assessments</p> <ul style="list-style-type: none"> <i>Self-editing of analysis</i> <i>Application of instructor edits</i> <i>Verbal check-ins on understanding of concepts in the form of conversation</i> <i>Regular review of the Rubric and reflections in a journal</i> 	<p>Other Evidence (assessments)</p> <ul style="list-style-type: none"> <i>Filling in a chart for each of the 12 sources that includes “backing organization/funding support”, “purpose of organization”, “purpose of source”, “background of author”, “key take-aways towards subject” in order to assess credibility; CRAAP tests in journal</i> <i>Collaborative and recursive reviews of general outline of research paper</i> <i>Final reflection</i>
<p>Stage 3 – Learning Plan</p>	
<p>Activities: “WHERE” and Rigor/Relevance</p> <ul style="list-style-type: none"> <i>The unit’s overarching theme is “Why use Fake News?”, and will begin with the introduction of the essential questions “What does ‘authority’ mean in terms of research, and why is it important” and “What comes first, the thesis or the research?” (H) (Relevant). The students will start with a reflective journal entry, and then discuss the definition, nature, and importance of “authority”, as well as the role of authority and credibility in research and shared information (W). Throughout the unit, students will have opportunities to write reflections on their growing understanding of these initial essential questions and further discuss the changing definition (R). Students will choose a topic that they are interested in researching and will use this topic as the foundation for further exercises that lead towards the final outline and annotated bibliography.</i> <i>The unit’s goal of understanding credibility and its relationship to research papers will be communicated initially, as well the end product of an annotated bibliography and outline. A rough rubric for the end product will be discussed and edited throughout the unit as the students begin to understand the principles further. (Relate)(W)</i> <i>Videos and podcasts such as Sinan Aral’s Ted Talk on misinformation (Aral, n.d.), “Hidden Brain’s” coverage of Fake News (Vedantam, 2021), and various articles on credibility will be used to help provide another perspective on what “authority” is and how falsified information is used. These will be reviewed at home, reflected on in their journals, and discussed in class the following day (Relevant) (Ex) (Eq).</i> <i>Students will have the opportunity to Use Chat GPT as an example of an “unreliable narrator” or “false support” by both generating articles that can pass as credible sources and by trying to identify credible sources with the use of AI. (H)(Eq)(Rigor)</i> <i>The relationship between thesis and research will be discussed along with the scientific method. Students will decide their approach towards their annotated bibliography and outline; research first and create a thesis for the outline from that research, or create a thesis and find support along the way. Research approaches will be reviewed using</i> 	

videos on different search methods and in-class exercises including discussions. **(Relevant)(Eq)**

- Websites will be evaluated for credibility by identifying valid sites to use using a CRAAP test and comparing them to “spoof websites” (such as theonion.com). Each source that students believe is valid will undergo a TRAAP test, and students will be required to choose twelve to use in their annotated bibliography. Time will be provided in class to discuss how to use a CRAAP test, as well as to do initial research. **(Ev)(Ex)**. Dynamic instruction and walk-throughs of citation websites such as Scribbr.com or Mendelay.com will be incorporated into research time to enable students to more appropriately keep track of their sources **(Eq)**.
- Explanations and guidance of “close reading” of scientific papers will occur in a collaborative workshop. The goals of the workshop will be to identify the most significant portions of the paper, discuss how the research within the paper itself relates to the thesis of the paper, how the paper relates to the students’ subject matter, and whether a heuristic can be developed to work through large amounts of research material. **(Rigor)(Relate)(Ev)(Eq)**
- Throughout the course, students will be prompted to reflect on activities in their journals and edit their original definitions and understandings of “authority” and its relationship to research. Students will have the opportunity to edit their annotated bibliography themselves, as well from outside feedback. The rubric will be finalized collaboratively prior to the student’s completion of the outline and bibliography. **(Re)(Ev)(Rigor)**
- A final reflection will be included in the presented project. **(Re) (Ev)**

Materials Needed for Unit:

- Appropriate technology and access to the internet (iPad, Chromebook, Laptop, etc.)
- Reflection/progress journal in One-Note that the educator has access to
- Access to Khan Academy; Teacher will assign homework from the Growth Mindset (Unit Two) Course throughout the Unit (<https://www.khanacademy.org/college-careers-more/learnstorm-growth-mindset-activities-us/high-school-activities>).
- Links to the Ted Talk mentioned above
- Links and instructions to homework podcasts and articles

Feedback Strategies

“High Impact Strategies #7: Setting Objectives and Providing Feedback”

Feedback will be provided regularly: within each skill development exercise, during discussions, written and discussed edits on assignments and journals, and through collaborative development. The class and individual goals are set at the beginning of the Unit and addressed through each element of feedback. Self-assessment is continual, and students will receive feedback on the final product as well. (Bureau of Teaching and Learning & Bureau of Special Education, n.d.)

Throughout the Unit/Formative

Feed Up: Where am I going? Goal Setting

- Collaborative Rubric
- Socratic Discussions on purpose of research

Feed Back: How am I going? Reflection

- *Feedback edits on annotated bibliography and outline drafts*
- *Post-activity/discussion journals*

Feed Forward: Where to Next? Future

- *Socratic Discussions on how to use research*
- *Feed-forward teacher-student dialogic*

End of Unit/Summative

- *Written feedback on completed Annotated Bibliography and Outline with dialogic to review feedback.*

Unit Plan for “Why Use Fake News”

18 Weeks

54 Classes (M/W/F schedule)

32 Students

Colorado Fall Semester 2024-2025

Classes:

1-2 (8/7 & 8/9) - Authority and Resource Intro

- Intro with syllabus, intro of fundamental concepts and intro discussion "what is authority"
- Explanation of semester project, intro of One Note journals and setup, examples of good and bad resources
- Work Day - Resource lookup exercise

3-5 (8/12, 8/14, 8/16) - Research & Annotated Bibliography

- Annotated Bibliography Intro with examples
- Discussion around “Validity” and “Why Use Sources”
- Work Day - Group Exercise centered around Chat GPT, wikipedia, and valid resources

6-8 (8/19, 8/21, 8/23) - Making a Claim/Thesis statements

- Intro to strong thesis statements
- Group discussion over What Comes First - thesis or research?
- Work Day - Creating BIG QUESTIONS from research

9-10 (8/26, 8/28 - no Friday) **Supporting Your Claim**

- **Discussion around supporting your claim using evidence from valid sources**
- Work Day - annotated bibliography research

11-12 (9/4, 9/6 - Labor Day) Academic Writing

- Intro to academic writing/grammar review/how to use editing tools and resources
- Work Day - re-writing exercise on turning non-academic pieces into academic pieces

13-15 (9/9, 9/11 9/13) - Research - Academic Research How-To's

- Intro do different Research Styles/Studies, statistical analysis, vocab around academic studies
- Discussion on what to look for, difficulties with research, what makes something “significant”
- Work Day - Find four papers with different research styles related to your topic

16-18 (9/16, 9/18, 9/20) Critical Analysis

- Intro to analysis of academic papers/studies
- Discussion around “What is Analysis”, “How do you create ideas”
- Work Day- identify main themes and make connections among several academic

19-21 - 9/23, 9/25, 9/27) Annotated Bibliography Drafts & Peer Editing

- Intro to Peer Editing
- Discussion - open-mindedness to peer editing/feedback
- Work Day - Peer Editing

22-24 (9/30, 10/2, 10/4) - 1st Quarter Ends - Annotated Bibliographies Due

- Discussion on Growth Mindset Course from Khan Academy
- Work Day - Bibliographies due before next class
- Reflection Day

25-27 (10/7, 10/9, 10/11) What if You're Wrong?

- Intro to strength in thorough research/finding opposing viewpoints
- Discussion on claims using resource- choose opposite side
- Work day - Researching a multimedia source to present to class (work during fall break)

Students off for a week

28-30 (10/21, 10/23, 10/25) Presenting your idea

- Intro to Professional Presentations and Q&A, examples provided
- Discussion around what a presentation entails/brainstorming different styles

- *Work Day - turning annotated bibliography into a presentation*
- 31-33 (10/28, 10/30, 11/1) *What to Keep*
- *Intro to prioritizing research*
 - *Discussion - what makes something important*
 - *Work Day - integrating feedback into presentation*
- 34-36 (11/4, 11/6, 11/8) - *Presentations & Feedback*
- *Presentation will be recorded either as a video or as a narrated slideshow, no more than 6 minutes in length. Each student will review three presentations. This class will be an intro into HOW to do it, and a review of one presentation. A rubric and feedback template will be provided.*
 - *Two more presentation reviews*
 - *Work Day - Feedback reflection for students, clarification, and brainstorming of integration*
- 37-38 (11/13, 11/15 (Veterans Day) - *Research Time Management*
- *Discussion time management styles and priorities*
 - *Draft a theoretical study and create a timeline for it, including style of research and analysis*
- 39-41 (11/18, 11/20, 11/22) - *Critical Analysis Part 2*
- *Intro to identification of gaslighting, false research claims, “considerations” in academic research papers*
 - *Discussion - Why disclose “considerations” or add “recommendations”*
 - *Work Day - Review “considerations” in research papers used for annotated bibliography*
- Thanksgiving Break*
- 42-44 (12/2, 12/4, 12/6) *Work Week for final drafts*
- *Work Day - finishing up research and making connections*
 - *Work Day - draft for peer edits due EOD*
 - *Discussion - Modern Topic “big idea” discussion and identification of what to look out for to ensure a valid claim, valid resources, and gaslighting*
- 45-47 (12/9, 12/11, 12/13) *Peer Editing & Final Drafts Due*
- *Work Day - Peer edits round 1*
 - *Work Day Peer Edits round 2*
 - *Work Day - integrating peer edits*
- 48-50 (12/16, 12/18, 12/20) - *2nd Quarter Ends - Reflection Week*
- *Final Drafts due before Class - Discussion on research process, timeline, key-takeaways of the actual physical process of writing a research paper*
 - *Final discussion on Authority and validity, identify a “ridiculous topic” to defend*
 - *Volunteer-based discussion - use your skills to defend your “ridiculous topic”*

OTL545 Technology and Innovation
Module 2: Critical Thinking and Technology

Critical Thinking Lesson Plan

Lesson Information

Lesson Title	Supporting Your Claim/ “How do we know I’m Right?”
Grade/Subject Area	9th/10th Grade English
Measurable Learning Objective(s)	<ul style="list-style-type: none">• Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. (CCSS: W.9-10.7)• Gather relevant information from multiple authoritative sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. (adapted from CCSS: W.9-10.8)
Curriculum Standard or Course Learning Objective	<u>Ninth / Tenth Grade Band, Standard 4.</u> <i>Research Inquiry and Design - Synthesize multiple, authoritative literary and/or informational sources, creating cohesive research projects that show an understanding of the subject.</i>

Technology and Critical Thinking

Technology	<ul style="list-style-type: none">• One Note Assignment Journals, Khan Academy, podcasts, YouTube videos, TedX Videos, online search tools, online editing and drafting tools, Chat GPT
	<ul style="list-style-type: none">• These tools are used throughout the unit to explore, discuss, and utilize research skills towards several projects and a larger research paper. This particular class utilizes some of the exploration from assignments using Khan Academy, research, and other in-class activities using online resources to discuss reasonably supporting an argument, both in writing and in speech.

Higher-Order Thinking	<ul style="list-style-type: none"> Students will have identified “Big Ideas” using creative reflection on past resources they found in previous activities and homework. They will then analyze several resources to support a claim, evaluate the validity of the resources and their perspective on the claim, identify how to support their claim using the resources, and then discuss the topic using their claims and resources in a class discussion. The discussion will utilize one “opening question” that the students have time in class to prepare for. There are no right or wrong answers, and the students must work on responding to students using justification, respectful approaches and language, and utilization of their resources and analysis skills.
------------------------------	---

Lesson Structure (20–40 minutes)

Key Activities (select one or create your own)	Time Allocation (minutes)	Description
Homework Review	5 min.	Short discussion/identification of main ideas from Khan Academy Growth Mindset homework
Review from Previous Class	5-7 min.	Short discussion identifying “Big Ideas” from previous class. Class votes on one Big Idea to discuss today. Big Ideas were culled from One-Note notebooks from previous classes’ work in preparation for this class. Five are provided to vote on.
Short Research	7-10 min.	Quick research period using previously used online sources OR current sources from One-Note research to answer the Big Idea question.
Discussion	10-15 mins.	<p>Socratic discussion on Big Idea. Emphasis of the discussion is using resources to support your claim, appropriately responding to students’ points of view, and using the spirit of inquiry and questioning to identify an answer or answers to the question. Some points to touch on:</p> <ul style="list-style-type: none"> How has your concept of “authority” changed from the first class? Why is it important to substantiate a claim? How much information and from what sources do you need to “prove” correctness? How do you respond to opinion-based claims vs. fact-based claims?
Wrap-Up and Review	5-ish mins.	Review conversation, take notes in “Class Recap” section of OneNote Journal on Key Take-aways from discussion, assigning homework.

References for Editing for Technology & Innovation integration:

- Brown, R. (2020). Teacher perceptions of critical thinking skills within primary school design and technology. *Design and Technology Education: An International Journal*, 28(2).
- Laskowski, T. (2023). Colin Seale on Closing the Critical Thinking Gap. *Educational Leadership*, 80(7), 14–19.
- Morozova, M., Gula, L., Dymar, N., Diachenko, I., & Bykadorova, N. (2022b). Influence of Critical Thinking Technologies on improvement of students performance during Self-Study. *Journal of Curriculum and Teaching*, 11(1), 59. <https://doi.org/10.5430/jct.v11n1p59>
- Rohland, L. (2023). Higher-order thinking. *Salem Press Encyclopedia*.
- Sahin, M., & Dogontay, H. (2018). CRITICAL THINKING AND TRANSFORMATIVE LEARNING. *Journal of Innovation in Psychology, Education and Didactics*, 22(1), 103–114.
- Silver, H. F., Boutz, A. L., & McTighe, J. (2022). 5 IDEAS for Developing Real-World Thinking Skills: Infusing five processes into assignments can help students hone the skills they'll need to address complex problems. *Educational Leadership*, 79(8), 38–42.
- Vejar, C. (2021). Critical Thinking: An Academic Perspective. *Salem Press Encyclopedia*.

References for Original UbD Lesson Design:

Colorado academic standards online. (n.d.). <https://www.cde.state.co.us/apps/standards/6,29,19>

Douglas, F., & Frey, N. (2023, August 4). *Feed up, back, forward.* ASCD.

<https://www.ascd.org/el/articles/feed-up-back-forward>

Faix, A. (2018). Teaching Online Research in the “Fake News” Era. *Association Supporting Computer Users in Education, Paper Presented at the Annual Meeting of the Association Supporting Computer Users in Education (ASCUE).*

Flynn, P. (2004). *Applying standards-based constructivism: A Two-step Guide for Motivating Middle and High School Students.* Eye On Education.

Library Guides: Evaluating sources: TRAAP Test. (n.d.). https://uws-uk.libguides.com/evaluating_sources/craap_test

Starr, J. P. (2023, October 29). Rigor and Relevance Framework. *Houghton Mifflin Harcourt.*
<https://www.hmhco.com/blog/rigor-and-relevance-framework>

Wiggins, G. P., & McTighe, J. (2005). *Understanding by design.* ASCD.

Wilson, L. O. (2021, June 1). *What are Essential Questions?* <https://thesecondprinciple.com/essential-teaching-skills/essential-questions/>