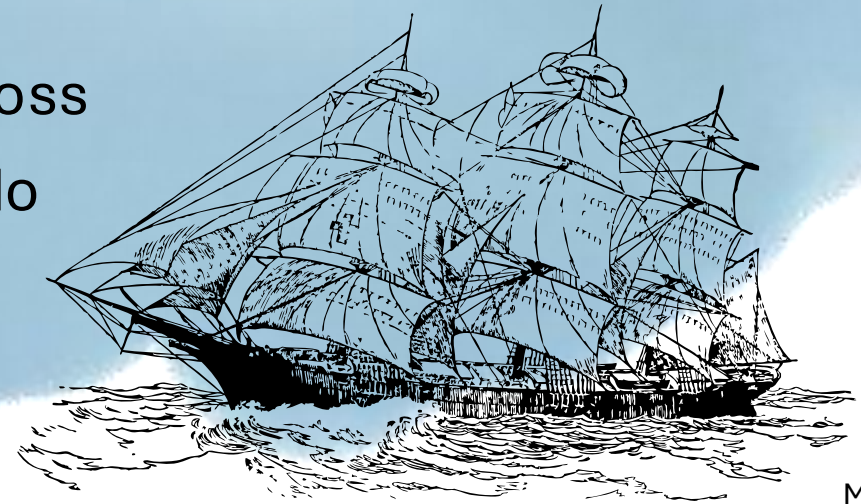
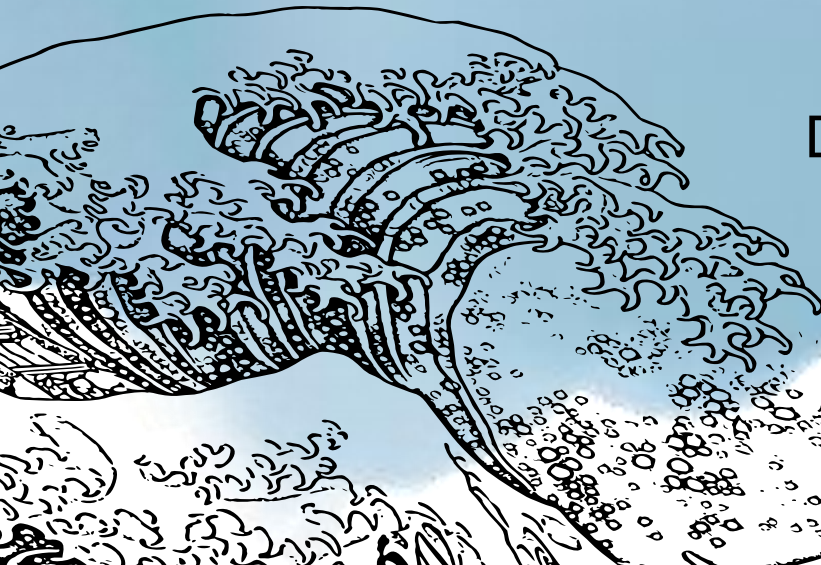


Can Students Navigate through Rough Waters?

Assessing Search Skills with Problem-Solving Scenarios

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Today's Voyage

- Assessing students' search strategies skills is challenging
 - Targeting specific strategies?
 - Gathering evidence of learning?
- Learn from our attempt:
 - How it started...
 - How it went...
 - What we learned...
 - How we changed it...



BEFORE WE SET SAIL...

University of Northern Colorado

- Greeley, Colorado
- Campus
 - Fall 2025, around 8,800 students (around 6500 undergraduate, 2200 graduate students)
 - 42% of undergrads are first-gen
 - 89% from Colorado
 - Hispanic Serving Institution, in 2024





Teaching & Learning @ UNCO

- Teaching & Learning Librarians
 - Course-embedded and credit courses
 - Digital learning objects
- Faculty, including Tenured, Tenure Track & Contract-Renewable
- Six Librarians; Five of us teach credit courses
- Those who teach credit courses are part of the Libraries Curriculum Committee



Curriculum Committee

- **Purpose**

- Review of course curriculum materials
- Creation and assessment of Student Learning Outcomes (SLOs)

- **Members**

- All full-time teaching faculty in libraries
- Department head, chair

- **Goals**

- Choose a new goal annually

Our Student Learning Outcomes (SLO)

Students will be able to:

SLO 1

- Develop a research process

SLO 2

- Demonstrate effective search strategies

SLO 3

- Evaluate Information

SLO 4

- Develop a coherent analysis of evidence from multiple sources

SLO 5

- Use information ethically



Students Being Assessed

- **Library Research Courses**

- Five courses: intro (8 weeks)
- One course: upper-level honors (16 weeks)
- Taught year around

- **Class setup**

- Scaffolded lessons, leading to a final project
- Projects require students to gather sources on a topic of choice



CHARTING THE WATERS

Literature Review

Lit Review: Challenges of Capturing Searching

- Students often unaware of search behaviors; gap between actual and reported behaviors (Botturi et al., 2025)
- Assessment often targets recall of terminology, not use of search strategies (Robinson & Jones-Edman, 2021)
- Capturing search data can be difficult and time-consuming (Botturi et al., 2025; Robinson & Jones-Edman, 2021)

Others' Voyages: Previous Approaches

- Search logs or journals (Herrström et al., 2020)
- Surveys (Mohd Nasir et al., 2024)
- Multiple-choice and short answer quizzes (Robinson & Jones-Edman, 2021)
- Combination of screen capture and follow-up interviews; rare because of practical constraints (Dahlen & Hanson, 2023)

FIRST CROSSING

First (Less Successful) Attempts at Assessment

Our First Attempt: Reflections on a Summary Table

- Assess Search Strategies (SLO 2) and Evaluating information (SLO 3)
- Students assigned a **summary table**
- Students asked to reflect on this assignment at the end of the course

Article Title, Author(s), Publication Year	Research Question or Hypothesis	Key Findings <i>(answer to research question)</i>	Participants/Data Sources Involved	Methodology <i>(how the study was conducted)</i>	Study Concerns, Notes about the Article	Search Strategy <i>(including keywords, limiters, databases, etc.)</i>

RESULTS FOR INITIAL ASSESSMENT (2020)

Keywords: 64% of students met expectations

Search Tools: 97% of students met expectations

Exploration: 63% of students met expectations

Issues that Needed to Be Addressed

Students copy and paste same answer for all sources

Too many elements being assessed

Timing of assessment

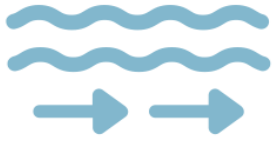
We decided to...

- Focus on single learning outcome
- Develop assignment that would prevent copying/pasting
- Schedule assignment earlier



SETTING SAIL

Current Assessment: Scenario-based problem solving



Our Current Course: Optimizing the Assessment



One learning outcome: demonstrate effective search strategies



Timing of assessment



Enhancing Inclusion



Making it relevant to curriculum and student experience

The Signature Assignment: How to Approach the Assignment

- Breaking down learning outcome to the major concepts
 - **Where** are you searching? (discovery layer, database, website)
 - **How** are you searching? (keywords, limiters, citation searching, talking to an expert)
 - **What** are you searching for? (source type)

Signature Assignment: First Year

- Decided on three scenarios
- Provided students a sample scenario and answer
- Recall search strategies discussed in class
 - Could use notes, course slides
 - Could try out strategies live
- Used rubric that had been normed from pilot testing in the summer

RUBRIC

Exceeds Expectations: Suggests **two or more** alternate search strategies per question that are appropriate for the scenario and could logically lead to a more successful search

Meets Expectations: Suggests **one** alternate search strategies per question that are appropriate for the scenario and could logically lead to a more successful search

Does Not Meet Expectations: Suggests **no** alternate search strategies per question that are appropriate for the scenario and could logically lead to a more successful search

Signature Assignment: Norming of Assessment Rubric

- Had a pilot in summer course with student athletes
- Curriculum committee reviewed several samples of student work
- We used those results for norming activity

Our Current Course: Setting Standards

After Norming the Rubric

- Discussed possible nuances
- Revising the prompt

How to Assess

- Each instructor assesses their class
- Each instructor will randomly divide their students into thirds, assessing one question per group (Questions 1–3)

Benchmark set: 75%

2024-2025 Scenario A (where):

Nadia's instructor assigned her a project where she needs to find peer-reviewed articles on online education and student success. She tried Google and got millions of results, which makes things confusing. Also, Nadia is struggling to tell if the articles she's finding are peer-reviewed. Some of the sources even appear to be recruiting her to attend school online.

Give Nadia two suggestions for ways to improve her search strategy beyond a basic internet search to find peer-reviewed articles on her topic.

2024-2025 Scenario B (how):

Your friend Kenna mentioned to you that they were struggling to find multiple sources for an upcoming UNIV101 paper on the topic of food insecurity in rural communities in the U.S.

They said they searched Summon with the keywords: food insecurity and rural. They got over 5 million results, but many of them were either sources focused on other countries or books (which Kenna feels are too long).

What are two suggestions you could give Kenna for improving their search strategy for finding appropriate sources that discuss their specific topic?

2024-2025 Scenario C (what):

Bennett is a new college student doing a research project on the value of a college education, which he plans to present to their classmates in English 123.

So far, he's found only news articles on his topic. Give Bennett two specific suggestions for improving how he searches for additional sources.



HOW WOULD YOU SCORE?

Rubric

Criterion	Exceeds Expectations	Meets Expectations	Does Not Meet Expectations
SLO 2: Demonstrates effective search strategies	Suggests two or more alternate search strategies per question that are appropriate for the scenario and could logically lead to a more successful search (alternate keywords, different databases, citation searching, talking to an expert, etc.)	Suggests one alternate search strategies per question that are appropriate for the scenario and could logically lead to a more successful search (alternate keywords, different databases, citation searching, talking to an expert, etc.)	Suggests no alternate search strategies per question that are appropriate for the scenario and could logically lead to a more successful search (alternate keywords, different databases, citation searching, talking to an expert, etc.)

Example #1:

Nadia's instructor assigned her a project where she needs to find peer-reviewed articles on online education and student success. She tried Google and got millions of results, which makes things confusing. Also, Nadia is struggling to tell if the articles she's finding are peer-reviewed. Some of the sources even appear to be recruiting her to attend school online.

Give Nadia two suggestions for ways to improve her search strategy beyond a basic internet search to find peer-reviewed articles on her topic.

Student A Answer:

First, she should get off of Google and use a database that is restricted to scholarly articles and books, such as Jstor or ProQuest. Next, I would recommend using quotation marks, "and" or "or", parentheses, etc. to find terms that are the most relevant to her project.

Example #2

Your friend Kenna mentioned to you that they were struggling to find multiple sources for an upcoming UNIV101 paper on the topic of food insecurity in rural communities in the U.S.

They said they searched Summon with the keywords: food insecurity and rural. They got over 5 million results, but many of them were either sources focused on other countries or books (which Kenna feels are too long).

What are two suggestions you could give Kenna for improving their search strategy for finding appropriate sources that discuss their specific topic?

Student B Answer:

For starters she could use the search, food insecurity in rural areas. This would make it specific for rural areas only and not just seperate communities. If she also wants to focus on other countries she would search international food insecurity in rural areas.



RESULTS

Our Current Course: Results

- Exceeded the 75% Benchmark!
- 112 students or 94% of students met or exceeded expectations
- Only 7 students (or 6%) did not meet expectations
- DID WE MAKE IT TOO EASY?
- Do scenarios need to target problem more explicitly?

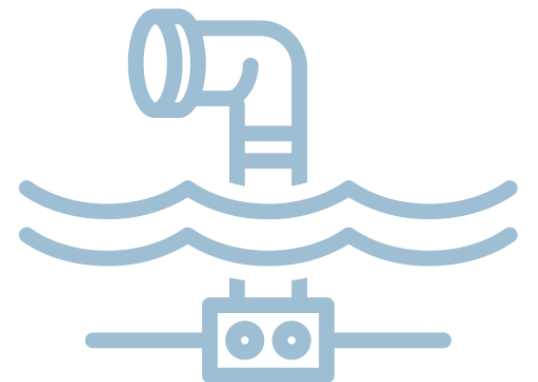
Our Current Course: Reflection

NEXT STEPS:

- Do we consider our job done since we got such great scores?
- Do we try this again?

DECIDED: TRY IT AGAIN

- Maggie and Darren would revise scenarios and rubric
- Revised assessment will be piloted revised scenarios in the summer





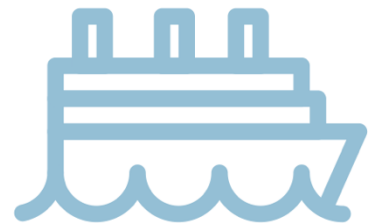
Revised Prompts for Second Year

2025-2026 Scenario A (where):

Valeria's instructor assigned her a project where she needs to find peer-reviewed articles on online education and student success. She tried Google and got millions of results, which makes things confusing.

Also, Valeria is struggling to tell if the articles she's finding are peer-reviewed. Some of the sources even appear to be recruiting her to attend school online.

Give Valeria two suggestions for ways to improve her search strategy beyond a basic internet search to find peer-reviewed articles on her topic.

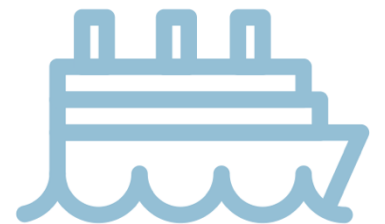


2025-2026 Scenario B (how):

Your friend Kenna mentioned to you that they were struggling to find multiple sources for an upcoming UNIV 101 paper on the topic of food insecurity in rural communities in the United States.

They said they searched Summon with the keywords: food insecurity and rural. They got over 5 million results, but many of them were either sources focused on other countries or books (which Kenna feels are too long).

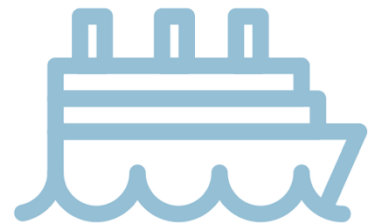
What are two suggestions you could give Kenna for improving their search strategy for finding appropriate sources that discuss their specific topic?



2025-2026 Scenario C (what):

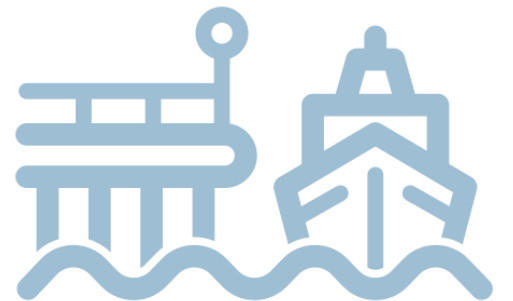
Bennett is a new college student doing a research project on the value of a college education, which he plans to present to their classmates in English 123. So far, he's found only news articles on his topic.

Give Bennett two specific suggestions for improving how he searches for additional sources.



Revised Prompts: Results

- Continued high levels of meets or exceeds expectations.
 - Some of our LIB courses do not have 100-level students
- Scenario-based assessment understandable, no confusion
- Pro/Con – there are no single right answers
- Students might have viewed it as busy work



CONSULTING THE CREW

Think-Pair-Share Activity Time!

Navigating on Your Own: You Try It Out!

- Choose ONE search strategy that you commonly teach
 - Keyword development
 - Using Boolean operators
 - Evaluating database choice
 - Refining a search after poor results
 - Using limiters/filters effectively
 - Or another strategy you teach
- Write down one search strategy you want students to demonstrate



Build Your Own Scenario



Scenario Builder

- **Context:** Who is the student in the scenario? What are they searching for? What is the course (or another context)?
- **Problem:** What's going wrong or what decision do they need to make?
- **Task:** What should the student being assessed *do* to demonstrate the skill?

Pairs-Share Out!

Share your scenario with your partner (or small group)



Partners: Look for the following in each other's work-Is it clear? Is it applicable? Is it realistic?



Try it out: How would you answer the prompt?

Think-Pair-Share Wrap Up

How does this kind of question help you better understand what your students *can actually do* with what you've taught?





Dock and Debrief

Wrapping up and Final Thoughts

Lessons Learned

- Flexible: search strategy assessed, length, subject area, population
- Note: can be considered busy work
 - Timing and statement of purpose important
- No single correct answer; room for creative problem solving
- Scenarios written for how, when, and what but sometimes they answered what we didn't expect
- Were skills from instruction or previous knowledge?
- For what we wanted it to do: it was effective!



Thoughts Moving Forward...

- Could use in course-embedded instruction
- Could be done as a pair and share activity with pair of students
- Can help with student's social anxiety?
- Scenario can be used as Padlet prompt
- Can be both summative and formative
- Paper vs. Online?
- In class assignment or extra credit?
- Would we want to break down by classes/instructor?



SHIP'S LOG

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Questions?