

The Design and Implementation of Integrated and Interdisciplinary Information Literacy Instruction for Science Majors

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1. BACKGROUND AND METHODS

- We were invited to teach information literacy in two required classes for undergraduate science and math majors.
- Course objectives were developed that drew from the ACRL Framework for Information Literacy for Higher Education.
- We collaborated closely with faculty to develop lesson plans that incorporated a number of active learning strategies.
- Feedback from faculty and a post-class assessment of student experience is being used to refine future lesson plans.

2. PROGRAM QUICK FACTS

EUREKA (Fall 2017)

- Year: Freshman
- Class size: >300
- Majors: undeclared
- Lecture: 1
- Recitations: 15
- Interdisciplinary recitations

PROPEL (Spring 2018)

- Year: Junior
- Class size: 156
- Majors: Physics, Math, Biology, Chemistry
- Lecture: 1
- Recitations: 8
- Discipline-specific recitations

3. COLLABORATING WITH FACULTY

- The development of the EUREKA/PROPEL information literacy curriculum involved substantial collaboration with the lead faculty for this program.
- The ACRL Framework for Information Literacy was effective in linking library teaching goals with the faculty's desired learning outcomes for the course.

SCAFFOLDING LEARNING OUTCOMES FROM NOVICE TO SCHOLAR

FIRST YEAR: EUREKA

- Construct effective database search strategies
- Describe how scholarly information is organized and discovered
- Identify and access discipline-specific scholarly databases
- Describe the difference between scholarly and popular resources
- Describe the peer-review process



THIRD YEAR: PROPEL

- Locate and integrate information from a range of resource types
- Summarize the changes in scientific knowledge over time on a particular topic
- Critique and evaluate study design and claims
- Recognize that authority can be defined differently depending on context and discipline

CREATING AN ACTIVE LEARNING ENVIRONMENT

SOCRATIVE

This free, web-based app was used for formative assessment and to engage students with interactive Q&A in a large lecture environment.

MYSTERY ARTICLE

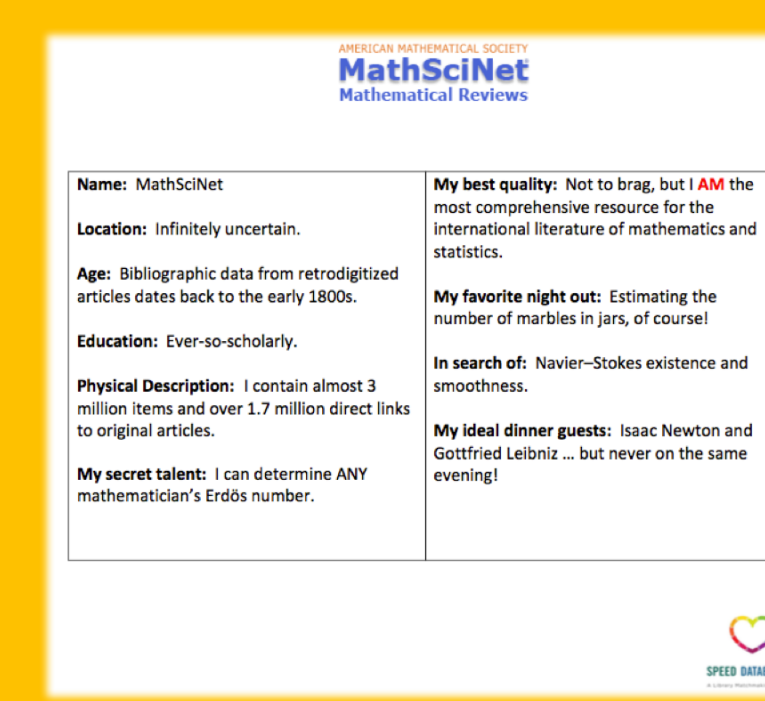
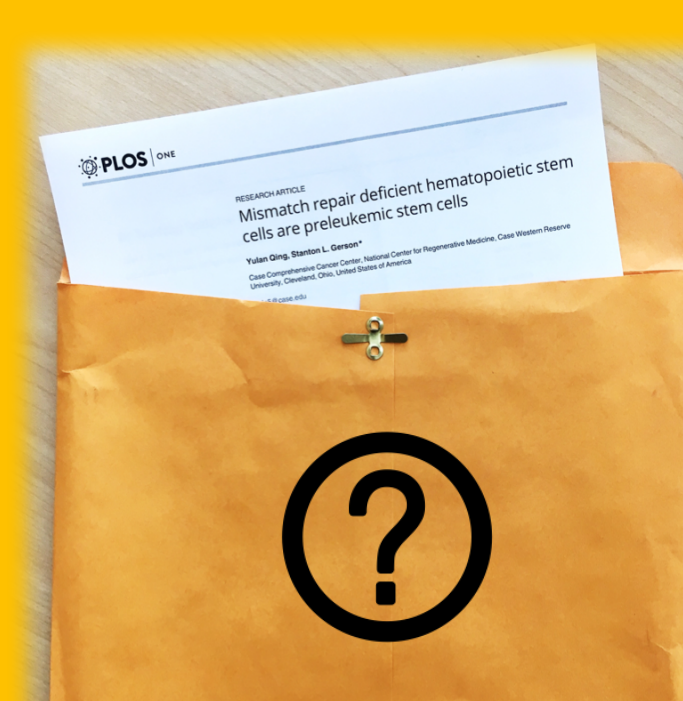
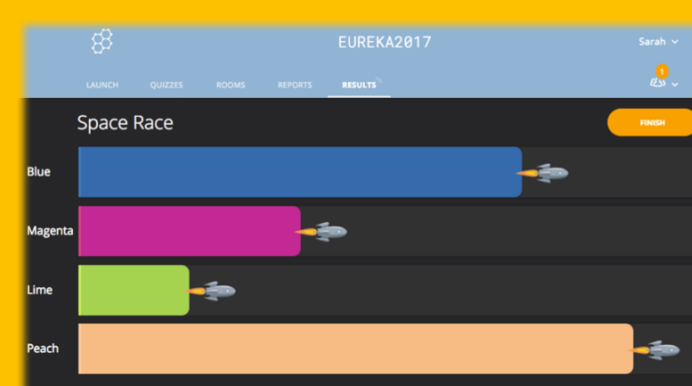
This recitation exercise challenged students to consider the credibility of scientific information from different source types and to prompt discussion about peer-review.

SPEED DATABASING

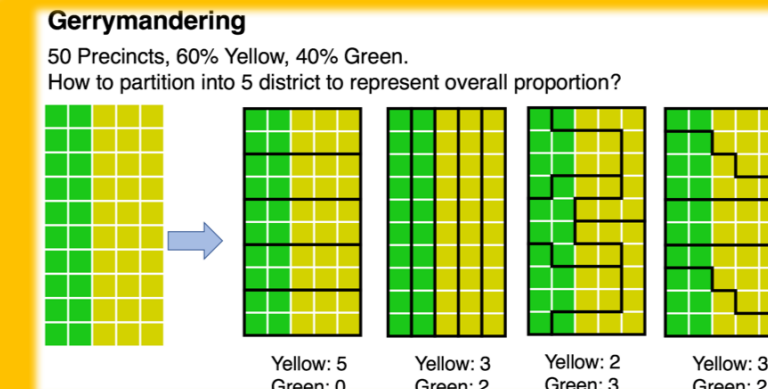
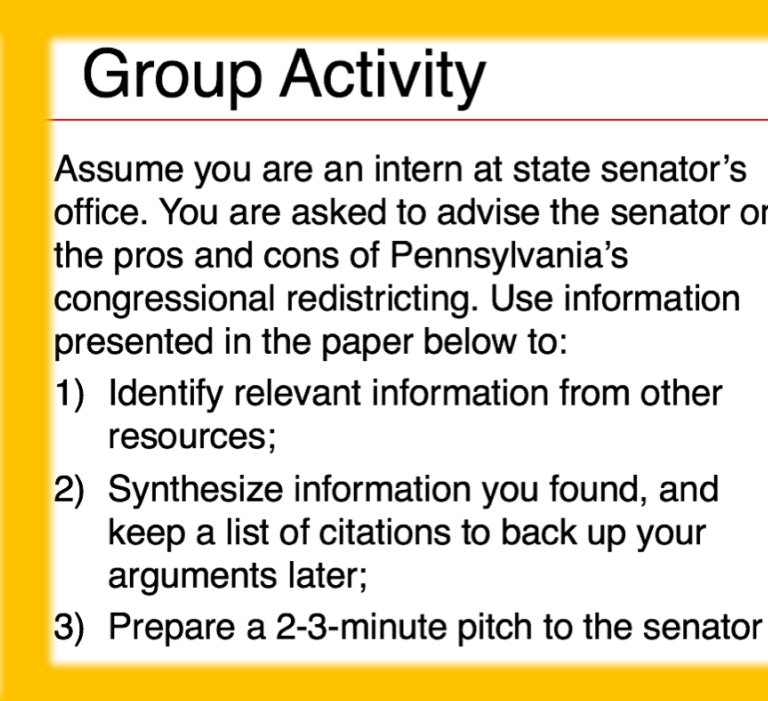
This exercise is loosely based on the concept of speed dating – students rapidly review four databases using the database's intro card.

ROLE PLAYING

Students act as start-up or government employees to pitch to stakeholders the societal or entrepreneurial importance of a topic, based on a research paper, and other evidence they find from reputable resources.



Scan me for more on info on speed-databasing



Adapted from <https://en.wikipedia.org/wiki/Gerrymandering> (original version attributed to Stephen Nass)

4. STUDENT FEEDBACK

EUREKA

- Most of the remaining questions were directional.
- Some students wanted in-depth instruction with discipline-specific databases or did not understand how to choose a database.

PROPEL

- 57% of respondents thought the Mendeley demo was the most useful part of the lecture.
- 74% of respondents found the role-playing activity helpful for learning how to find information from multiple sources to support an argument.

5. CHALLENGES

- Active learning for large classes
- Restricted to in-class content only
- Variable disciplinary backgrounds
 - EUREKA: students not separated by majors
 - PROPEL: different recitation materials for different majors
- Negative presumptions by students in PROPEL
 - Lack of relevance
 - Extra course load
- Collaborating and coordinating with teaching faculty and TAs

6. FUTURE DIRECTIONS

- Design future efforts with an intent for research
- Reach out to our learning center for development of active learning and other teaching/learning methods
- Experience greater buy-in from Juniors in the PROPEL course
- Enhanced use of Canvas (learning management system)
- Goal to keep getting invited back to contribute