

Examples of exercises to meet General Education goals in large lecture courses

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Introduction

- Judy Goodenough (judyg@bio.umass.edu)
- I teach Bio 106 Human Biology, a 500 student class
- **Goal:** add a 4th credit with worthwhile material without greatly increasing work load
- **Key:** use a platform such as Spark
 - Exercises can be graded with or without your input
 - Score is automatically entered

SPARK: For Course Management

- Course content reusable

1. Assessments – Grade entered automatically

– Quiz

- Many short answer formats
- Can create question sets so questions are randomly displayed
- Connects student name/ID with quiz

– Survey

- Indicates which students completed the survey
- Used when responses are not graded

SPARK: For Course Management (cont'd)

2. Assignments

- Connects student name/ID with assignment
- Student can upload lengthy document (word processing, spreadsheet, PowerPoint)
- Instructor assigns grade that is entered automatically
- Instructor can make comments on the document and return assignment

Gen Ed Learning Objective: Working Collaboratively

Students write questions for other students

- Divide the class into groups.
- Have each group read a different article and write questions on the article.
- Post the best questions as a quiz/survey.
- Have students switch articles and take the quiz.

Gen Ed Learning Objective: Application to Real World Problems & Contexts

- Find news stories (content or issue) related to the course topic.
- The student provides the citation, a summary, and a discussion question, which he or she answers.
- Selected examples could be posted for discussion or used in class for discussion.

Gen Ed Learning Objective: Application to Real World Problems & Contexts (cont'd)

- Questions about animations or YouTube video clips (content or news).
- You can generate questions or students can develop questions that you then post.

Gen Ed Learning Objective: Application to Real World Problems & Contexts (cont'd)

- Lucy Lawful is a 60 year-old lawyer who has made a decent living as a defense attorney in the rural farming community of Heartland. The only industry in the town is a factory that makes plastics. Her career has been her whole life. She never married and has no children. She lives with her older sister, Dora, who was diagnosed with breast cancer 5 years ago. Lucy "reached" menopause two years ago. Without a "monthly reminder" to examine her breasts, she became less conscientious about monthly breast exam. One day she discovers a lump in her breast that turns out to be breast cancer.
- Lucy watched a television show that explained that some common substances, such as pesticides and certain ingredients in plastics, have effects on the body similar to those of estrogen. Lucy blames the plastics factory for her cancer and that of her sister. She sues the plastics factory.
- Write a letter to the editor of a local newspaper arguing either for or against Lucy's claims against the plastics factory. In your letter you should use at least FIVE FACTS related to breast cancer, breast anatomy, or physiology, to support your point of view.
- **Underline the facts so they can be easily identified.**

Gen Ed Learning Objective: Application to Real World Problems & Contexts (cont'd)

Respond to article

- Find an article in a journal intended for non-scientists, such as *Scientific American*, and post questions on content or social issues addressed.
- www.sciam.com

Gen Ed Learning Objective: Application to Real World Problems & Contexts (cont'd)

- Describe an observation.
- Student designs an experiment to determine x , y , or z .
 - The experiment does NOT have to be conducted.

Gen Ed Learning Objective: Application to Real World Problems & Contexts (cont'd)

Critical Thinking: Case Studies

- I found these sites by Googling. There are many others. You do have to register, but it doesn't cost anything. Questions could be modified for multiple choice answers.
- <http://ublib.buffalo.edu/libraries/projects/cases/ubcase.htm>
- <http://capewest.ca/pbl.html>
- <http://capewest.ca/ct.html>
- The case studies at these sites are usually lengthy.

Gen Ed Learning Objective: Application to Real World Problems & Contexts (cont'd)

Shorter case study questions

- Mrs. James appeared at the clinic complaining of extreme nervousness and sweating, saying that she could feel and hear her heart thumping when she tried to sleep at night. Laboratory testing revealed hyperglycemia and increased basal metabolic rate. Although she also proved to have high blood pressure, tests of thyroid function were normal. What is your diagnosis? What treatment should be used?
- [multiple choice answers]

Gen Ed Learning Objective: Information Literacy

Critical thinking: Information literacy

- Find and evaluate relevant references. In my classes, I usually require at least 3 references with the reasons those references were selected.

Gen Ed Learning Objective: Information Literacy (cont'd)

Timely matters:

- Last fall I asked whether students thought that the doctor who implanted embryos resulting in octuplets should suffer legal consequences.

Gen Ed Learning Objective: Information Literacy (cont'd)

Attention deficit/hyperactivity disorder (ADHD) is caused by a neurotransmitter imbalance. Write a short article for the health section of a local newspaper describing the symptoms, causes, and treatment of ADHD. Use at least three reliable sources (books, journals, or websites). List each source you considered, and explain why you chose the three sources you used.

Gen Ed Learning Objective: Information Literacy (cont'd)

Use at least three reliable sources (books, journals, websites) to design an exercise program for yourself. Begin by deciding on your fitness goals. Next, plan a logical progression of activity that considers the type of activities you enjoy. List each source you considered, and explain why you chose the three sources you used.

Gen Ed Learning Objective: Information Literacy (cont'd)

Evaluate evidence

- Find an advertisement for a product (related to course content) and evaluate the claims made for the benefits of using the product.

Gen Ed Learning Objective: Information Literacy (cont'd)

Prepare a brochure or poster

- e.g. Prepare a brochure or poster that could be displayed in a doctor's office that conveys information about the H1N1 virus.

Gen Ed Learning Objective: Information Literacy (cont'd)

Explore relevant content:

- e.g. The incidence of childhood asthma has increased steadily during the last few decades. What hypotheses have been proposed (at least three) to explain this increase in asthma? What evidence supports each hypothesis?