

GEN ED#4 – USE INFORMATION MANAGEMENT AND TECHNOLOGY SKILLS EFFECTIVELY FOR ACADEMIC RESEARCH AND LIFELONG LEARNING**QCC Example Outcomes:**

- a. Determine the extent of information needed for a research question, problem or issue
- b. Access needed information effectively and efficiently
- c. Evaluate information and its sources critically and assimilate selected information
- d. Use information effectively to accomplish a specific purpose
- e. Demonstrate an understanding of the economic, legal, social, and ethical issues surrounding the use of information and information technology
- f. Employ technology in research and fields of interest
- g. Identify the role of technology and its impact on the individual, society and the environment

Common Core Outcomes:**Flexible Core: II – requirements for all categories**

1. *Gather, interpret, and assess information from a variety of sources and points of view.*
2. *Evaluate evidence and arguments critically or analytically.*
3. *Produce well-reasoned written or oral arguments using evidence to support conclusions.*

SEE ALSO:**I.C.5.**

Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

II.D.7.

Articulate ethical uses of data and other information resources to respond to problems and questions.

II.E. 8.

Demonstrate how tools of science, mathematics, technology, or formal analysis can be used to analyze problems and develop solutions.

II.C. 8.

Use appropriate technologies to conduct research and to communicate.

II.E. 10.

Articulate and evaluate the impact of technologies and scientific discoveries on the contemporary world, such as issues of personal privacy, security, or ethical responsibilities

**GEN ED OUTCOMES
ADDRESSED IN
ASSESSMENT:****QCC 4**

- b. Access needed information effectively and efficiently
- b. Use information effectively to accomplish a specific purpose

Flexible Core: II – requirements for all categories

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**EVIDENCE/ MEASURABLE
DATA**

Students were assessed based on their performance in the laboratory, discussion, quality of the dissection, drawings and correct labeling, and dissection report. The following learning outcomes were assessed:

• **GROUP SIZE:**
No. of students 105
No. of sections 6

- a. discussed in groups and represent their opinion to the class on two topics: why fetal pigs are use in laboratories and where are these fetal pigs coming from
- b. measured their specimen and determined its age
- c. worked in pairs to dissect fetal pig using proper dissecting tools
- d. drew their specimens and correctly label the external anatomy

	<ul style="list-style-type: none"> e. drew diagrams of dissected organ systems f. hypothesized about the function of each organ and organ system g. created a chart comparing structure and function of organ systems h. compared the pig anatomy to human anatomy i. dissected the pig heart and compared it to the human heart model j. described how the blood flows through the heart
FINDINGS	<p>Students attending all of the lab sessions during Spring 2013 participated in the assessment. 105 worksheets from 6 sections were collected and graded by the same faculty member. Students demonstrated an understanding of the structure of the heart and the blood flow in the mammalian cardiovascular system. Only 2% of the students did not perform adequately. The main difficulty was keeping track of the names of vessels in the pulmonary system. Stressing the proper naming of the blood vessels would reinforce the learning (several students made simple mistakes confusing pulmonary veins with pulmonary arteries). Students demonstrated ability to draw the diagrams of the organ systems. Only 5% of the students did not score adequate or above. Some of the diagrams were oversimplified and some were not properly labeled. Stressing the need to pay attention to the details would be beneficial. Students demonstrated the ability to draw the dissected specimen. Only 7% of the students did not score adequate or above. The main problem was with proper labeling of the body parts. Some students pasted drawing cut from the lab book. Perhaps the instructions were not clear enough. All students worked in groups very well and could properly use the dissection tools. Most of the students could properly measure the specimen and based on the measurement determine its age. Only 7% of the students did not score adequate or above. Some of the students had difficulties with keeping the track of the units (for example using inches instead of millimeters or incorrectly converting cm to mm). Quick reminder of the unit systems would solve the problem. Students discussed the reasons for using fetal pigs in the lab and the source of them. Only 8% of the students did not score adequate or above. The students either neglected to answer the question or did not provide full answer. Students were already comfortable working in groups. They previously performed dissections of various organisms and were familiar with proper use of tools. The assessment was performed at the end of semester and students were very familiar with the laboratory procedures. Number of students performing Excellent and Very Good exceeded expectations. We expected that all of the students will achieve at least adequate in all of the activities. The few students who scored not adequate in many cases just missed a question. In the future the need to be detail oriented will be stressed.</p>
ACTION PLAN*	<p>All faculty involved in the assessment engaged in discussion of the results via e-mail. Everybody agreed that students engaged in the assignment and put an effort. The results showed that students are learning how form and function are related in a representative vertebrate, the fetal pig. The assignment engaged students and possibly will be implemented as one of the lab activities.</p>

*Include this information in the Department's Year-End Report.

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QCC Example Outcomes:	Common Core Outcomes:
<ul style="list-style-type: none"> a. Determine the extent of information needed for a research question, problem or issue b. Access needed information effectively and efficiently c. Evaluate information and its sources critically and assimilate selected information d. Use information effectively to accomplish a specific purpose e. Demonstrate an understanding of the economic, legal, social, and ethical issues surrounding the use of information and information technology f. Employ technology in research and fields of interest g. Identify the role of technology and its impact on the individual, society and the environment 	<p>Flexible Core: II – requirements for all categories</p> <ul style="list-style-type: none"> 1. <i>Gather, interpret, and assess information from a variety of sources and points of view.</i> 2. <i>Evaluate evidence and arguments critically or analytically.</i> 3. <i>Produce well-reasoned written or oral arguments using evidence to support conclusions.</i> <p>SEE ALSO:</p> <p>I.C.5. <i>Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.</i></p> <p>II.D.7. Articulate ethical uses of data and other information resources to respond to problems and questions.</p> <p>II.E. 8. Demonstrate how tools of science, mathematics, technology, or formal analysis can be used to analyze problems and develop solutions.</p> <p>II.C. 8. Use appropriate technologies to conduct research and to communicate.</p> <p>II.E. 10. Articulate and evaluate the impact of technologies and scientific discoveries on the contemporary world, such as issues of personal privacy, security, or ethical responsibilities</p>
GEN ED OUTCOMES ADDRESSED IN ASSESSMENT:	<p>QCC 4</p> <ul style="list-style-type: none"> b. Access needed information effectively and efficiently c. Evaluate information and its sources critically and assimilate selected information e. Demonstrate an understanding of the economic, legal, social, and ethical issues surrounding the use of information and information technology <p>Flexible Core: II – requirements for all categories</p> <ul style="list-style-type: none"> 1. <i>Gather, interpret, and assess information from a variety of sources and points of view.</i> 2. <i>Evaluate evidence and arguments critically or analytically.</i> <p>II.E. 8. Demonstrate how tools of science, mathematics, technology, or formal analysis can be used to analyze problems and develop solutions.</p>
<p>EVIDENCE/ MEASURABLE DATA</p> <ul style="list-style-type: none"> • GROUP SIZE: <p>No. of students <u> 291 </u></p> <p>No. of sections <u> 15 </u></p>	<p>Fifteen course sections comprised of 291 students were assessed via the following survey questionnaire:</p> <p>Please indicate whether you agree or disagree with the following statements by marking the Scantron form accordingly:</p> <p>A = You agree with the statement</p> <p>B = You are neutral - neither agree nor disagree with the statement</p> <p>C = You disagree with the statement</p> <p>1) This class helped me understand and discuss economic concepts and theories. (examples: supply and demand, opportunity costs, gains from</p>

	<p>trade)</p> <p>2) This class helped me understand the importance of economic reasoning to decision making in business, government, and households.</p> <p>3) This class helped me weigh decisions on the basis of their costs and benefits.</p> <p>4) This class helped me apply economics to my own life and decisions.</p> <p>5) This class helped me understand the power and limits of economic reasoning.</p> <p>6) This class helped me understand human behavior in economic terms.</p> <p>7) This class helped me better understand issues like trade, growth, and the business cycle.</p> <p>8) This class helped me better understand fiscal and monetary policies.</p> <p>9) This class helped me read economic articles and literature with more sophistication.</p> <p>10) This class helped me use graphical analysis to gain insight into economic issues and problems.</p>
FINDINGS	<p>Questions 9 and 10 addressed Gen. Ed. 4 (use information management and technology skills effectively for academic research and lifelong learning). The general education objective concerning student abilities to use information management and technology skills for academic research and lifelong learning was surveyed over two questions with an “agree” response range of 53.7 to 64.3 percent, with an average “agree” response of 59.0 percent.</p>
ACTION PLAN*	<p>On the whole, the assessment was successful, with a majority of students responding that most objectives, both course and general educational, had been fulfilled; however, there was room for improvement. So, what can be done? First, it would probably be useful to convene a committee, comprising full-time economics faculty, to review, and possibly revise, standards of our master syllabus. Objectives could be clarified and honed in this way. Second, having taken the first proposed action, full-time economics faculty might find it easier to carefully craft questions for future surveys and assessment so as to extract more specific information regarding achievement of priorities and objectives. In essence, clearly stated objectives would facilitate greatly factor-specific assessment in the future. And presumably, better assessment would further enhance the faculty’s ability to meet stated objectives and to provide excellent student outcomes.</p> <p>Third, the relatively weak “agree” response (53.7 percent) regarding the last general education objective concerning student abilities to communicate through reading, writing, listening and speaking is disappointing. The aforementioned committee of full-time economics faculty members will be convened to investigate the issue and make more precise recommendations as to classroom implementation. In summary, to improve student outcomes and student agreement with stated course and general education objectives, we must:</p> <ul style="list-style-type: none"> ☐ Update, improve, and clarify stated objectives ☐ Dispense objectives to all economics faculty, emphasizing the importance of achieving objectives for student outcomes ☐ Improve future surveys for more refined factor-assessment ☐ Emphasize, with greater vigor and consistency, student’s exercising their communication skills, especially so, as we are such a diverse institution.

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- f. Employ technology in research and fields of interest

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**EVIDENCE/ MEASURABLE
DATA****• GROUP SIZE:**

No. of students _____

No. of sections _____

Problems 3 and 4 on the final exam tested the facility of students to use available technology – a graphing calculator with matrix functions – to solve problems.

FINDINGS

With a standard of 4 points out of 6 as satisfactory, only 11 out of 21 were counted as satisfying this standard.

ACTION PLAN*

“The results indicate that more attention should be given to the casual use of the calculator ...”

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