Quantitative Reasoning in the Contemporary World

Project Summary
The ability to reason about issues that mix words and numbers is now an essential competency for US residents. The proliferation of quantitative data and analyses has reached all aspects of life in the US, including informed participation in democratic processes. This project continues the development of an educational infrastructure about an innovative quantitative reasoning course, created by Bernard L. Madison that has evolved through its offering at the University of Arkansas over the past seven semesters. The project includes making the course transportable, adaptable, and more effective and creating assessments and scoring rubrics to both measure learning in the course and to compare that learning to the learning in two other courses, one somewhat similar and one traditional. The innovative course derives from a collection of newspaper and magazine articles and is organized by processes of QR and not by mathematical or statistical topics. The project has produced the first draft of case studies of QR-based media articles and an accompanying volume documenting the learning results, pedagogical strategies, and a guide for using the case studies in a QR course is in progress.

QRCW at Central Washington University
Course taught - Fall 2008
Enrollment - 24 students
QL Requirement - Satisfies our "Math for Liberal Arts Major" requirement.

Overview of Class
-Readings from "A Case for Quantitative Literacy" & "Importance of Quantitative Literacy"
-Students read and completed 11 case studies from text: small group work, class discussions, individual write ups
-Additional assignments: Create your own index, Medical Accuracy, Credit Card case study, reading of Bas's "Birds-Dead and Deadly: Why Numeracy Needs to Address Social

Assessment
For students
4 quizzes 33%
Homework 42%
News of the Day 17%
Attendance 8%
Of the course
Pre/post written assessment (+2.5/17)

QRCW at University of Arkansas
First course offered in Fall '04 to volunteers; Spring & Fall '05 for journalism majors; Spring '06 to general audience
NSF-funded QRCW project bridged the efforts at 3 universities regarding instruction in Quantitative Literacy
40 students per section; meetings twice a week for 80 minutes each; 30 total meetings per semester.
Fall '08: began using Case Studies for Quantitative Reasoning by Madison and Dingman (previously used notes)
Mathematical topics include measurement, number sense, rates of change, probability & statistics
Assessment
For students
HW, Quizzes, Class Investigations (50%)
Midterm Exam (20%)
Final Exam (20%)
Attendance & Participation (10%)
Of the course
Pre/post MC Test (+3/17)
Strong support from faculty in arts, humanities, and social sciences
Positive feedback from students -course suited to their needs and likes

QRCW at Hollins
Course taught - Spring 2008 and Fall 2008
Enrollment - Approx 20 students each time
Two QR Requirements for General Education - q & Q
Satisfies our "q" requirement.

Overview of Class
-Classes sessions per week based on Bennett & Briggs text
-Case studies completed with Excel
-Students write up their assignments resulting in a QR in the news portfolio
Assessment
Students (Total of 850 points)
300 points
Four excel labs (110 points)
Six "QR in the News" assignments (110 points)
Final Exam (150 points)
Participation (100 points)
Course Pre/post NC test (+1.5/17)
Written paragraph on "Importance of QR"