March 31, 2003

Preliminary Report on Quantitative Reasoning Test

The Quantitative Reasoning Test was first made in the early Spring Semester of 2000. The test has been undergoing class-testing, item analyses, and modifications ever since.

The choice of the problems was guided by the following criteria:

* The problems should be application problems that (almost) everyone can understand.

* Most of the problems should involve more than one concept.

* The problems somehow support one of the "goals of mathematics instruction" given in the handout "Assessment in Mathematics".

The "goals of mathematics instruction" in the last statement refers to the goals stated in "A Source Book for College Mathematics Teaching".

A Source Book for College Mathematics Teaching, prepared by Committee on Teaching of Undergraduate Mathematics of the Mathematical Association of America, states (among others) the following as the goals of mathematics instruction:

* Mathematics instruction should provide students with a sense of the discipline -- a sense of scope, power, uses, and history.

* Mathematics instruction should be aimed at conceptual understanding rather than at mere mechanical skills, and at developing in students the ability to apply the subject matter with flexibility and resourcefulness.

* Mathematics instruction should help students to develop what might be called a "mathematical point of view" -- a predilection to analyze and understand, to perceive structure and structural relationships, to see how things fit together.

* Mathematics instruction should help students learn to present their analyses in clear and coherent arguments.

The class-testing of the Quantitative Reasoning Test was done by three instructors, Donnabelle Pascual, Karen Fujishima-Lee, and myself. The statistical analysis of the results of the test was done by myself with the help of Andrew Rossi, the Administrative Institutional Analyst. When the test was given for the first time, it became evident that the test had to be revised. We gave the revised version to our Math 25 classes in the fall semester of 2001. I made an item analysis of the results of my students. (I did not have time to do the same for Donnabelle's and Karen's students.) The item analysis indicated a need to rearrange the problems, placing "easier" problems up front and the harder problems toward the end, so that students can go through more problems before they get hang up. Donnabelle and I gave the same test to our Math 25 classes in the spring semester of 2002. I made an item analysis of the papers of those students who were getting A's in my classes. To my surprise, more of these students (percentage wise) made mistakes in Problem 1. Apparently it is not necessary to know how 1.3 trillion looks like.
when it is written in the long form. So, I threw out the problem in the new version of the test. Karen suggested to rephrase one of the problems, and so I did that. Then, I looked into "Some Problems Related to Minimal Competency" listed in Pages 38 through 40 of "Quantitative Reasoning for College Graduates: A Complement to the Standards", and I added 4 more problems, similar to those given in the list. We gave this new version to our Math 25 students. The results are included with this report.

At first sight there seems to be no relationship between the grades (percentage) of the students and their scores in the Quantitative Reasoning Test. However, upon closer observation, we see that more students getting the grade of C or better score more than 10 (out of 24) in the Quantitative Reasoning Test. It seems to me that we need to examine our curriculum so that more students receiving the grade of C or better score considerably higher than 10.
### All Data Combined

### Correlations

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<th>PERCENT</th>
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<td>Pearson Correlation</td>
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<tr>
<td>PERCENT</td>
<td>1.000</td>
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<td>QRT</td>
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<td>Sig. (2-tailed)</td>
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<td>PERCENT</td>
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<tr>
<td>N</td>
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**. Correlation is significant at the 0.01 level (2-tailed).

![Scatter plot showing correlation between PERCENT and QRT](image-url)
MEMO

Date _ April 1, 2003

To _ Gail Levy

From _ Doug Kaya

About _ REPORT ON ASSESSMENT FOR THE SPEECH DISCIPLINE

FOR SP COURSES

Of the four Speech courses listed in the catalog, only three are being offered on a currently regular basis. For Fall 2002, 16 sections of SP 151 were offered, 2 sections of SP 200, and 4 of SP 251. So because the course offerings were predominately SP 151 (about 73%), the assessment attention is being focused on SP 151.

For SP 151 (Personal and Public Speech), during the last two years Pat Mitiguy has been using a rubric she has created to assess speech intelligibility to collect enough data for a reliability study. The other three full-time faculty members have been introduced to the rubric and have indicated that they would be willing to use it in their classes in order to provide more data, so that the results would reflect the course as being taught on campus rather than the course as being taught by a single instructor.

To include the equally important aspect of non-verbal delivery, Carleen Yokotake is initiating the design of a similar rubric to be used in conjunction with the intelligibility rubric.

These two rubrics together are being considered to serve as the assessment instrument for all Speech courses.

No provisions have begun for the two regularly offered COM courses.

FOR GENERAL EDUCATION OUTCOMES ON ORAL COMMUNICATION

The Discipline is taking a more critical look at its courses, especially the core objectives which will determine the course outcomes and exit competencies. The plan is to:

review the six listed outcomes listed in the Catalog,

review the outcomes as results of each of the Speech and Communication courses,

review the outcomes in relationship to its critical role in General Education at LCC,
revise the outcomes to reflect the course work and define the behavior described by the General Education purpose statement,

determine how to assess the outcomes,

develop a rubric,

conduct an assessment using the rubric, and

evaluate the assessment and modifying the procedure and rubric as needed.

FOR ASSOCIATE IN ARTS DEGREE COMPETENCIES ON ORAL COMMUNICATION

The competencies for the Associate in Arts degree on Oral Communication are understood to mean the knowledge and performance skills developed from the Speech courses and focused by the LCC's General Education concept. So in order to assess them, the Discipline intends to:

review the oral communication competencies listed in the LCC Catalog,

review the competencies in relationship to those developed by each of the other community colleges and UH Manoa to assure articulation within the UH System,

revise the campus competencies as necessary,

determine how to assess the achievement of its competencies,

develop an instrument to test whether or not the competencies are being met,

conduct an assessment, and

evaluate the assessment and then modifying the procedures and instrument as needed for LCC.