

Progress Report on General Education Assessment, 2003-04
May 12, 2004

Prepared by Nancy Westphal-Johnson, Chair, General Education Committee

Please refer to the “Proposal for University Assessment Funds, General Education Committee: May 14, 2003” for a detailed description of planned activities. The listing and information below is drawn from the “Specific objectives or goals of the assessment activity” section of the proposal.

- ❖ Continue the work of the Quantitative Assessment Program.
 - See the attached “Quantitative Assessment Project: Annual Activity Preliminary Report (2003-04).
- ❖ Begin exploring the use of the retention database for analysis of student learning outcomes in the general education program as a whole.
 - See comments below concerning the database built for analyzing the curricular role of Comm B. The combination of the retention dataviews and DARS analysis could be applied to any element of the curriculum as well as to many different student groupings and we will be exploring this further.
- ❖ Continue dissemination and action on results of the Verbal Assessment Program’s findings in the Senior Survey and Comm A information literacy.
 - The study is complete and a report will be produced this summer. See the attached “2003-04 Verbal Assessment Report” for further information.
- ❖ Continue work on implementation and further assessment of possible changes based on the Comm B assessment and the General Education Committee’s recommendations.
 - Changes to the Comm B criteria were approved by the University Academic Planning Council on June 12, 2003.
 - Work on a Comm B database has begun through the joint efforts of Melania Alvarez-Adem of the QAP and Assistant Dean Michael Pflieger (DARS Coordinator for L&S and member of the General Education Committee). Initially, Melania tried to build the database with the retention dataviews only but this proved difficult. By combining information from the dataviews with information from DARS (using it as an analytical tool), it was possible to build the database. Initial analysis of student curricular histories in Comm B courses is now being conducted and will continue in 2004-05.
 - Planning for the establishment of an Oral Communication Lab has been stalled indefinitely at this point due to budget and staffing constraints.
 - The campus Library Instruction Program has initiated multiple Information-Literacy-Across the Curriculum projects.
- ❖ Continue publication of the Verbal Assessment bulletin.

- See the attached “2003-04 Verbal Assessment Report.”
- ❖ Begin assessing student awareness of the general education program and its purposes, including how the goals of general education are manifested in individual courses and advising interactions.
 - Dr. Elaine Klein completed formal focus group training at the University of Minnesota as did Dr. Brian Bubenzer (via funding provided through another funded assessment proposal). Thus, the general education program is now able to draw upon the services of two trained focus group facilitators. This will make it much easier to undertake assessment projects that utilize focus groups without the need for hiring the services of the Survey Center or other similar consultants.
 - Pilot student focus groups were begun in spring semester, 2004-05. Unfortunately, many were scheduled during the time of the TAA walk-out and, as a result, only one focus group session was completed. This effort will continue in fall, 2004-05. Based on the one focus group that was held, it might be advisable in any event to hold such sessions with first year students in the fall semester to get a clearer sense of a beginning student’s awareness of the general education program and its goals.
- ❖ Begin assessing faculty, instructional staff, and adviser awareness of the general education program and its purposes, including how the goals of general education are manifested in individual courses and advising interactions.
 - We were not able to undertake this study in 2003-04 and ask to carry over funding to the 2004-05 academic year.

Quantitative Assessment Project: Annual Activity Preliminary-Report (2003- 2004)

Melania Alvarez-Adem

Joel Robbin

The University of Wisconsin-Madison Quantitative Assessment Project (QAP) seeks to help faculty to enhance the quantitative component of General Education at UW-Madison.¹ The QAP began in 1990 as the University's response to a Regent mandate to assess quantitative abilities of emerging juniors. With Madison's subsequent adoption of a general Quantitative Reasoning (QR) requirement, the QAP expanded its focus to General Education courses. Assessing the effects of the QR requirements over time is still one of our objectives, as well as monitoring undergraduate quantitative ability through examining courses carrying science distribution credit.

The heart of the QAP approach is a collaborative effort with one or more faculty members in some particular course, designed to identify quantitative abilities which will be assumed by the course, to assess the extent to which students have these abilities at the start of the course, and to provide immediately helpful feedback to both students and faculty on the result. From these individual collaborations, the QAP notes similarities in course expectations, in testing and feedback problems, in attempts to modify courses, and offers this experience to faculty who want to work to enhance their courses.

The pursuits of the Quantitative Assessment Committee have continued expanding in various directions. We continue to sample courses and match assessment closely to the requirements and expectations of instructors. However, we are using the information provided by the UW-Warehouse database to assess students and to help several departments (such as Pharmacy and Mathematics) to evaluate their prerequisites. We can go beyond grading tests and correlating them with the student's math background. We are now able to ask and answer questions with Infoaccess that we could not do before, we can now follow and answer questions on students' progress, as you will see in this report.

Course Assessment Procedure:

Courses are selected the semester before they are assessed. We ask department chairs, deans, as well as course instructors to recommend courses that meet our criteria. Faculty members who have participated in the past may request another assessment or refer interested colleagues to us. If an instructor contacts us with quantitative concerns about a course, we try to include it immediately. Since assessing the effects of the QR requirements over time is one of our goals, we communicate with instructors slated to teach QR-B courses. Courses carrying science distribution credit have also helped monitor general undergraduate quantitative ability. We continue to include courses at the junior level in order to assess the quantitative preparation of students beginning core courses in their majors. These upper level courses typically involve the application of material from prerequisite mathematics and statistics courses to the subject material in the major, which has been covered more qualitatively in introductory courses. Some of these courses have been designated QR-B; others have QR-B prerequisites (such as calculus or introductory statistics) and demand a higher degree of quantitative ability.

¹ "General Education" is, broadly speaking, the part of education which is not specific to a departmental major.

A test is designed after meeting with the course instructor(s), examining the textbook, and looking over past course exams for quantitative content. We work with the instructor to design a pretest of skills which (a) students are expected to have at the start of the course, (b) will be used in the course, and (c) will not be explicitly taught in the course. Our draft of the test is revised by the instructor to focus on the topics of most concern to him or her. We emphasize that the test is not an assessment of the course or instructor, but of the instructor's expectations of the quantitative abilities of students enrolled in the course.

The test is given during the first two weeks of the semester, usually during lecture or in discussion sections. Its format is written answers, not multiple choice, in order to provide us with information on areas of specific student difficulty.

Graduate students from the Department of Mathematics, Economics and Engineering grade the tests, writing comments on each exam to help students understand their mistakes, and recording detailed information on student progress on each problem.

The graders record students' responses on a separate key so that we can return the tests to students immediately after grading, while we continue to analyze the results. In addition to the grader's comments, students are provided with solutions to the problems and references to specific sections of the common campus mathematical textbooks so that they can review necessary skills and address any deficiencies early in the semester.

A report of the results of the test, with a breakdown of the success on each problem, is provided to the course instructor, usually within two weeks of the test date. The detailed grading key prepared for each test allow us to analyze which topics cause the most problems for this group of students. The report also includes a summary of the mathematics and statistics courses taken by the students (what percentage has taken calculus, was there a large difference in performance based on previous courses taken, etc.)

By giving and returning tests early in the semester, students have a better understanding of faculty expectations, the importance of Math prerequisites, and the topics that they need to review in order to avoid problems later.

The report of results allows faculty to adjust for student ability, spending more or less time on certain topics or offering a review. Some departments have changed courses' mathematics prerequisites in response to student performance on these tests or upon reexamination of the quantitative content.

Note that we provide information only. Instructors in the course may decide to give students handouts on specific quantitative topics, or to hold review sessions or workshops. If they feel a more systematic response is needed, they make changes in their syllabus or talk with their department about changes in course content or prerequisites. Any initiative for change in the course must be taken by the faculty involved in the course, not by the QAP. Some instructors choose to set up customized workshops, add review sessions, or provide handouts on specific quantitative topics. Changes in curriculum, course content, prerequisite courses, or additional workshops are the responsibility of the concerned faculty and departments. Neither the Quantitative Assessment Committee nor the Department of Mathematics interferes with their autonomy.

a. Assessment Activities 2003-2004

Six courses were assessed by the quantitative assessment project during the Fall and Spring semesters. Tests were taken by 964 students. More than 97% of enrolled students took the assessment test, reflecting a high degree of commitment from the involved faculty, as well as making the results a more credible measure of general student ability.

Courses Assessed –Fall Five courses participated in the quantitative assessment project during the Fall semester. Tests were taken by 782 students during the first two weeks of classes.

Food Science 440: *Principle of Food Engineering*, (8), applies quantitative methods from calculus to material introduced qualitatively in previous courses in the major. It is a prerequisite to the QR-B course offered in this department.

Pharmaceutics 352 (141): We will be giving assessment tests in the pharmacy school to students entering the Professional Pharmacy Program. This will help the Pharmacy School to design or require the necessary Math courses that their students will need to succeed in their program.

Math 211 & 221 *Calculus and Analytic Geometry* (620). Introduction to differential and integral calculus and plane analytic geometry.

M521: *Advance Calculus: Aerodynamics* (13).

Courses Assessed –Spring one course participated in the quantitative assessment project during the Spring semester. The test was taken by 182 students during the first week of class.

Math 221 *Calculus and Analytic Geometry* (182). Introduction to differential and integral calculus and plane analytic geometry.

Impact

The nature of our assessment procedure makes faculty more aware of the quantitative content in their courses. Many faculty were not aware of the degree of quantitative material and their assumptions of student proficiency until we interviewed them. Designing a test of expected skills causes them to focus on the importance of specific topics to applications in that course. Most faculty who participate in the project find that they do have specific questions about their students' quantitative abilities that our assessment can answer.

Over the last ten Fall semesters, Professor Rich Hartel has used an assessment pretest as part of his efforts to improve Food Science 440. The pretest has proved to be a good indicator of how well students do in the class. By identifying specific areas of difficulty, he has developed a workshop for students in this class to review necessary mathematical skills. Students improve their math skills while relating them to the course material. Professors Hartel, Howell, and Hyslop have written a workbook, *Math Concepts for Food Engineering*, based on their successful workshop. In addition, Professor Hartel, and Melania Alvarez-Adem have published the results of these ten years of results in the Journal of Food Science Education (volume 3, Issue 4, April 2004):

<http://www.ift.org/pdfs/jfse/jfsev3n2p0026-0032ms20040127.pdf>

The School of Pharmacy contacted us to assess the students entering several of their professional and graduate programs. They continue actively using the data we provide to change their quantitative requirements and to require some students to take Math courses during the summer.

In Math 211 & Math 221, we gave the same test in both courses. We wanted to check how good the placement test is by looking at the difference in scores on the test between both courses. As expected, students in Math 221 did better than the students in Math 211. However, we are going to continue tracking these two groups and we will keep on working on these results. One of our main goals is to look at the university's math placement test and see how well it works in predicting students' success.

b. Assessment using the Retention Database

A committee headed by Kathy Luker has developed a "Retention Database" which is part of Infoaccess. Joel Robbin served on this committee. Since the database has become available, the QAP has steadily increased its use of it. We have worked to answer several questions that have been posed to us by the Math Department.

This year we are helping the School of Letters and Science and the General Education Committee in their study of use of comm B courses. We will be using Infoaccess databases to obtain the information needed to answer the following questions:

- Are there certain majors more prone to repeating Comm B?
- From which departments are students taking the most Comm B?
- What is the distribution of Comm B offerings, by department?
- What Comm B courses have prerequisites that are also Comm B?
- What Comm B courses are taken as the second in a sequence, in which the first course is also Comm B (but not a prerequisite)?
- Do double and triple majors take more Comm B than single majors?
- Are students taking Comm B to fulfill major requirements?
- What do specific populations (e.g., pre-med) take for Comm B?
- Do any specific populations, other than major, take more Comm B than others?
- When do students normally take Comm B?
- Do Honors students take more Comm B?
- How many Comm B courses are taken NOT to meet the Comm B requirement

c. Plans

Most faculty members contacted about participating in quantitative assessment do so willingly and we perceive a greater enthusiasm on behalf of the faculty engaged in this project. As you can see in our report, we are asked to give an assessment test in some courses year after year given that the instructors find the information we are giving them useful.

However we keep investing some effort in increasing the visibility of our work both on and off the campus. This included initiating meetings with faculty in several departments, sending information about our work to faculty members in the UW System and at other institutions, speaking about assessment at mathematics organization meetings, and using email interest groups to make contacts about assessment.

We have become more visible around campus and it is our hope that more people can use our services. The use of Infoaccess is allowing us to ask and answer more questions about students' performance. This has given us the ability to compose more complete reports.

2003-04 VERBAL ASSESSMENT REPORT
May 11, 2004

Prepared by

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Professor of Communication Arts

This document provides a description of verbal assessment at the University of Wisconsin-Madison. Following a brief overview of the Verbal Assessment Project, I summarize assessment activities in the 2003-04 year. The concluding section offers recommendations for future verbal assessment efforts.

THE VERBAL ASSESSMENT PROJECT: AN OVERVIEW

Since the fall of 1997, the Verbal Assessment Project has focused on evaluating the general education communication program. Broadly speaking, the objectives of general education instruction in communication address two types of student outcomes. First, students should manifest improved *skills* in writing, oral communication, and information literacy. In addition, students should develop *attitudes* about the process of writing, speaking, and accessing information resources that promote the implementation of those skills. Thus, the mission of the Verbal Assessment Project is to provide insight into the impact of general education communication courses on the associated abilities, knowledge, and attitudes of University of Wisconsin students. (An elaborated discussion of the mission of the Verbal Assessment Project was included in the 1997-98 Verbal Assessment Report and is available upon request.)

VERBAL ASSESSMENT ACTIVITIES: 2003-04

In 2003-04, my activities focused primarily on finalizing the Comm-A Information Literacy report and disseminating information related to communication and information literacy instruction through two issues of the Verbal Assessment Bulletin. In addition, I continued my participation in training conducted through the Writing Center for Comm-B TAs.

Comm-A Information Literacy Study

In spring semester of 2002, one section from each of Communication Arts 100, Engineering Professional Development 155, English 100, and English 118 participated in the study. In each class, instructors identified one writing or speaking assignment that required students to use periodical publications as resources. Instructors then assigned students to complete a library research log book in conjunction with conducting research for that paper or speech. The research log solicited step-by-step information from students about their research strategies and reasoning as they located sources for the class assignment. Completed research logs were collected by the course instructor and forwarded along with a final bibliography to the Verbal Assessment Committee.

In the past year, my efforts have focused on finalizing the report of the study and disseminating results. In collaboration with Abbie Loomis, I presented results from the study at the annual meeting of the

Wisconsin Association for Academic Librarians and to personnel in the UW-Madison Libraries. In addition, the study is scheduled to be presented at the 2004 Annual Teaching and Learning Symposium. As a result of the study, strategies for library instruction in the Comm-A course have been modified to address evidence that students rely heavily on the Internet as a starting point for their library research. The summary of this study will be submitted as an addendum to this report within the next month.

Verbal Assessment Bulletin

The mission of the Verbal Assessment Project includes serving as a source of tools and information related to communication instruction and verbal assessment. The *Verbal Assessment Bulletin* is a newsletter produced by the Verbal Assessment Committee to provide information about verbal assessment activities. The December 2003 issue of the *Bulletin* reviewed changes to the Comm-B requirements stemming from the 1999 Comm-B study. Because those changes afford greater latitude for oral communication instruction, the issue also included resources for creating oral communication intensive courses. The May 2004 issue reported the major findings of the Comm-A Information Literacy study, described resources for supporting library research instruction, and showcased exemplars for integrating information literacy skill-building into courses.

The *Verbal Assessment Bulletin* is circulated to faculty, lecturers, and instructors instrumental in presenting Comm-A and Comm-B courses. In addition, copies of the newsletter are sent to a variety of campus administrators. Thus, the *Verbal Assessment Bulletin* continues to be an important source of information about verbal assessment efforts for administrators, faculty, and instructional staff involved in delivering the general education communication courses on this campus.

TA Training

In August 2003 and January of 2004, I participated in the Comm-B Instructor Training Session. In light of evidence from previous assessment studies that oral communication instruction is relatively ineffective in these courses, this presentation focused on strategies for integrating oral communication into the Comm-B course.

RECOMMENDATIONS FOR FUTURE VERBAL ASSESSMENT EFFORTS

This report marks my last as chair of the Verbal Assessment Committee; therefore, future efforts are naturally at the discretion of the L&S General Education Committee and my replacement. I offer recommendations for possible courses of action, which follow from the work completed by the Verbal Assessment Committee during my tenure as chair.

First, I see merit in continuing publication of the *Verbal Assessment Bulletin* as an instrument for sharing the results of assessment efforts with the campus community. This newsletter might be recast as the “*General Education Assessment Bulletin*” to convey the assessment efforts conducted by the committee. In any case, the *Bulletin* reflects a relatively low cost and direct mechanism for sharing assessment efforts and their implications with faculty and instructors on this campus.

Second, I note that previous verbal assessment activities have targeted writing and information literacy outcomes, but oral communication skill outcomes were not directly assessed in any study to date. Thus, I

recommend an assessment of oral communication skills associated with either Comm-A or Comm-B instruction.

A third and somewhat more specific concern focuses on the decision rules for granting Comm-B credit to transfer students. At present, a transfer student can earn Comm-B credit for courses taken elsewhere that are similar in content to a UW-Madison Comm-B course regardless of whether the course taken was communication intensive. Although this decision rule was perhaps a necessity during the implementation of the Comm-B requirement, the extent to which this option compromises the general education communication program is unclear.

Finally, the University of Wisconsin is approaching the 10 year bench mark since the introduction of the general education communication requirements. The early years of these requirements were dominated by concerns about student access to courses carrying Comm-B credit. With the availability of these courses seemingly stable, I believe that it is time to review two issues: (a) How do courses that were originally approved for Comm-B credit currently meet the course criteria? and (b) Are there identifiable constituents for particular courses who bring particular needs to those courses? The 10 year anniversary of the requirements strikes me as a good time to consider the contemporary nature of the Comm-B classes and the students who take them.