Assessment Report

on

Academic Programs and General Education

at the

University of Minnesota, Morris

October 2007
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October 20, 2007

The Higher Learning Commission
30 North LaSalle Street, Suite 2400
Chicago, IL 60602-2504

To Whom It May Concern:

**Subject.** Report on assessment from the University of Minnesota, Morris, due on or before November 1, 2007.

This is in response to the HLC mandate of October 11, 2005, which states: “The report will describe the University’s comprehensive program for assessing student learning in academic programs and in the general education curriculum. It will also describe the data on student learning that come from the assessment measures of student learning, and report how these data on student learning are fed back to academic departments and used to improve that learning.”

**UMM’s Report on Assessing and Improving Student Learning.** It consists of three parts: twenty-five reports on assessment and student learning within UMM’s academic disciplines, pp. 1-70; a report on course-embedded assessment of general education as it occurs within the disciplines, pp. 71-76; and the appendices, which are the raw material for producing the first two parts that are the heart of the report.

**An Observation.** The following statement was made in UMM’s Five-Year report, dated June 28, 2005: “As a result while disciplines are in the process of evaluating the effectiveness of both their curricula and their assessment programs, it is too early to report on any changes prompted by the assessment program for most majors.” The following statement is made in the HLC response of October 11, 2005: “The University states that it is **too early to report on any changes prompted by the assessment program in most majors.**” (HLC italics) Having worked long and hard on this report, I hold that **two years ago was not too early** to report on changes prompted by the assessment program in most majors. All majors had capstone courses two years ago, and many of them had used assessment to improve student learning. The discipline reports will support that assertion. It is also true that assessment activities at UMM are more vigorous and extensive than they were two years ago.
**Producing the Report.** The Assessment of Student Learning Committee (ASLC), which I’ve chaired since the fall of 2006, approved a plan for producing this report. I met with administrators, disciplines or groups of disciplines about this report, and spoke to the Campus Assembly, our legislative body, about it. UMM’s Director of Institutional Research and I held a forum on the report.

Disciplines sent me reports on their assessment activities. Sometimes these were formal reports of the type that disciplines had been producing annually, sometimes just ad hoc responses to my request, and sometimes just emails, some of them rather chatty at that. These are in the appendices.

I shaped this raw material into a two- to four-page discipline report in a standard format, which I returned to the discipline for its critique. If it recommended changes, I always made them. In a few instances I’ve taken no reply as tacit approval, but in most instances I’ve had explicit endorsement.

As you will learn, UMM has adopted a course-embedded program for general education, so once the discipline reports were completed I drafted the second part of the report. The ASLC critiqued the initial draft and two colleagues critiqued the redraft, which led to the final.

**HLC Response to UMM’s Report.** Please address it to

Chancellor Jacqueline Johnson  
309 Behmler Hall  
University of Minnesota, Morris  
Morris, MN 56267

Thank you.

Sincerely yours,

James Togeas  
Professor of Chemistry  
Chair, Assessment of Student Learning Committee
Anthropology Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Anthropology discipline goals. The goals of the discipline are to

   • acquaint students with the concerns, theories, and methods of the discipline through comparative understanding of the range of human societies in both humanistic and scientific terms
   • enhance student competency in applying anthropology as a science
   • provide students with competency in a major subfield of anthropology that addresses biological variation, human evolution, and the human capacity to create culture.

The sociology curriculum supplements anthropology.


   Physical anthropology. Physical anthropology, the study of human biology in the framework of evolution, is a major subfield of anthropology. This course satisfies the science lab general education requirement.

   The course seeks to develop student understanding in three broad areas:

   i. the biological basis of human life through the study of genetic inheritance, human adaptation, and variation
The study of living non-human primates and their social behavior.

The principles of evolution as well as the evolutionary history of fossil anthropoids, hominoids, and ancestral humans.

All three areas were assessed by using pre- and post-testing methods. The tests consisted of a string of concrete questions that looked at different aspects of the area.

For the first area, for example, the pre- and post-test focus was on five aspects of the relationship of human adaptation and variation to the notion of human race.

Learning strategies between the pre- and post-test included laboratory exercises such as precise cranio-facial measurements, besides in-class lecture and discussion, and out-of-class reading. The pre- and post-test consisted of questions to assess student learning in each of the five aspects of this relationship. The instructor recorded the frequency with which students demonstrated that they had achieved each learning objective.

The assessment for the other two areas was similarly designed and implemented.1

The instructor has implemented a number of new learning strategies for the course based on student performance over the past few years. The assessment outlined above and presented in detail in the full report in the appendices was first used in the fall of 2006.

General education categories spanned by the discipline

Anthropology courses carry one of the following general education designators: SS, human behavior, social processes, and institutions; Sci-L, physical and biological sciences, with lab; HDiv, human diversity; IP, international perspective; Envt, people and the environment; or E/CR, ethical and civic responsibility. Exceptions are directed study, seminar in anthropological theory, and senior seminar, which bear no general education designator.

1 The full report is in the appendices. It identifies concretely the aspects that were evaluated and the frequencies with which students met learning objectives.
Art History Discipline Assessment 2006-2007

Scope of assessment activities

____ √ Course-embedded assessment

____ √ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

____ √ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or
preprofessional exams

_____ Qualitative internal and external juried review of
of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in
the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Art History discipline goals. The purposes of the art history curriculum are to
   • develop students’ understanding of some of the historical traditions in the visual arts
   • teach students methods of analysis and interpretation of works of art
   • help students discover the rich and complex relationship of art to other aspects of culture.


   Principles of Art and Renaissance to Modern Art. Both are required for the art history major and are also taken by non-majors for general education credits. Principles is the first course in the major. Neither has prerequisites. Both have the same learning objectives, which reflect the discipline learning goals:
   • to become familiar with important works of art
   • to develop the ability to analyze the formal properties of works of art
   • to develop an understanding of the relationship of art to its social context.

   Student learning was tracked with three exams in Principles and four in Renaissance. The two courses together provided six opportunities for measuring improved learning of the
course objectives in moving from one exam to the next. In moving from the first to the second exam, improvement was detected in five of the six objectives, and in three instances the improvement was quite dramatic. In *Principles*, the instructor attributed the improved learning to “an increasing focus on stressing these data in the classroom” and on implementing a study guide. In *Renaissance*, students achieved high marks on the first exam on two of the objectives. The instructor notes that the relatively poor performance on the third objective seemed due to a confusion of material, which was cleared up in subsequent class meetings, as revealed by a strong performance on the second exam. Generally students possessed correct information and any weakness in their written work was due to lack of precision or thoroughness. He concludes his report with the happy observation, “This was the best 1000 level class I have ever taught.”

General education categories spanned by the discipline

Art History courses all bear the FA, fine arts, general education designator with the exception of directed study, Italian Renaissance and Baroque Art in Context, and the Capstone Assessment of Student Experience in Art History, which bear none.

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2 All quotes are from the art history assessment report in the appendices, which also contains all of the numerical data collected as well as the instructors’ observations and interpretations.
Biology Discipline Assessment 2006-2007

Scope of assessment activities

___√__Course-embedded assessment

___√__ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___√__ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. The biology curriculum is designed to provide students with
   • biological knowledge
   • scientific skills as part of their general education
   • the skills to conduct and interpret scientific research
   • the ability to communicate scientific information both verbally and in writing.

2. The Capstone Course: Senior Seminar.

   Senior seminar is the major’s capstone course, in which students present an hour-long seminar on a biological topic, thereby demonstrating their ability to communicate scientific information verbally. The course is intimately related to the acquisition of writing skills, since it is often the case that the topic written about in Biological Communications is the subject of the talk in Senior Seminar.

   A number of changes based on assessment have been made over the years to improve student learning. The change in grading from S/N to A/F has both improved student effort and provided students better feedback on their efforts. The interaction of student and faculty advisor in the run-up to the seminar has been greatly intensified,
that is to say, there is a much more hands-on approach by the faculty. A schedule has
been instituted in which students must meet a series of benchmarks before the seminar.
Qualitatively, the faculty has seen great improvement in the seminars.

3. Assessment-based curricular changes to improve student learning.

3.1. Fundamentals of Genetics, Evolution, and Development.
This, the new gateway to the major, is designed to give students a firm
evolutionary framework for subsequent course-work. It replaces the previous gateway
course, Principles of Biology, which was taught at a less introductory level, producing
students with uneven levels of knowledge and skills.

3.2. Biological Communications II.
The new Fundamentals course is less writing-intensive than the Principles course it
replaced. The addition of this course to the already existing Biological Communications I
compensates for this change.

3.3. Molecular Biology.
This course has been required for the major for a long time, but has been aimed at
juniors, and was often not taken until the senior year. However, it became apparent that
knowledge of molecular biology was often needed by students in Biological
Communications and in preparing for Senior Seminar, and that too many students
struggled because they hadn’t yet taken the course. Hence, the course is being
reconfigured to make it appropriate for sophomores, and will be taken in the spring
semester of the sophomore year.

3.4. Breadth and width.
The Biology faculty judged that the balance between breadth and depth was
skewed away from the former. To correct this imbalance, the major now consists of five
core courses and four electives instead of the previous six and three. Genetics was
dropped as a core course, but the topic became part of the new Fundamentals course to
guarantee that majors have knowledge of the field.

4. Course-embedded assessment: pre- and post-testing.
Pre- and post-testing has been used in two of the major’s core courses, Evolution of
Biodiversity and Ecology, both taught by the same instructor. He has used two different
multiple-choice exams as the assessment tool. The first exam used in Ecology was based
on questions appearing in the Graduate Record Exam. However, some of the questions
were so easy that high scores on the pre-test resulted, leaving little room for measuring
improvement. Other questions were esoteric, which made it “hard to map the results to
particular units of my class.”3 For both courses, the instructor now uses questions drawn
from the test bank that accompanies textbooks. In all five instances where the pre-
test/post-test format was used, the class showed improvements in student learning.4

4. Course evaluation by students
Instructors often use end-of-course questionnaires for student feedback and
evaluation of their courses. These are useful for improving courses. An example for Biol
3121, Molecular Biology, is included in the discipline summary.

3 Quoted from the Biology discipline report, which is in the appendices.
4 Numerical results along with some brief instructor comments are in the discipline report.
General education categories spanned by the discipline

Biology courses bear one of two general education designators: Sci or Sci-L, physical and biological sciences without and with lab, respectively. Exceptions are directed study, human anatomy, biological communication I & II, practicum in biology, biochemistry lab, and senior seminar, none of which carry a general education designator.
Chemistry and Biochemistry Discipline Assessment 2006-2007

Scope of assessment activities

___√___ Course-embedded assessment

___√___ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___√___ Capstone experience

_____ Portfolio assessment

___√___ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Chemistry and biochemistry discipline goals.
   Students study, at a level appropriate for undergraduates,
   • the structure of matter and
   • the conditions required for material change.
   The curriculum is designed to prepare students for post-graduate work in a wide variety of fields, or for a career in industry, or in secondary teaching. Students may earn either the traditional chemistry or the biochemistry major.

2. Capstone course: the two-semester senior seminar.
   Senior chemistry majors should be able to
   • undertake an in-depth study of a specialized topic in chemistry and
   • orally present the results of their research in a professional manner.
   There are concrete expectations about the seminar’s format and depth. Over the past five years the faculty has assessed the seminar and instituted a number of changes to improve student learning.
   • The first semester has been moved to the spring semester of the junior year and a number of learning strategies instituted.
• The grading basis has been changed from S/N to A/F.
• The faculty has prepared guidelines for students to follow during the semester of their seminar to assure timely and thorough preparation.
• Although one faculty member is formally assigned to supervise the course, each faculty member supervises one or more students in seminar preparation.
• All faculty contribute to judging the degree to which each student has met the goals of the seminar.


3a. General chemistry.
This course is required for the chemistry, biology, and geology majors, and satisfies the general education requirement for physical and biological sciences with lab. Lecture and lab in this course are designed to complement each other. The instructor assessed student learning in lab with exam questions in lecture. The learning objectives to be met were understanding
  i. the theory of density measurements
  ii. the concept of significant figures
  iii. the concepts of the limiting reagent and percent yield
  iv. the concepts of acid-base chemistry and solution stoichiometry
  v. the interplay between atomic spectroscopy and models of the atom.
The instructor recorded the frequency with which students met the learning objectives. In general, student success was high except for the second objective, which prompted the instructor to create a strategy for improving student learning for significant figures.

3b. Analytical chemistry.
The learning objectives were understanding
  i. multiple ways to represent concentrations
  ii. how to convert between units
  iii. propagation of uncertainty
  iv. dilution and density
  v. pH and pOH, and the mathematical relationship between the two
  vi. use of correct significant figures.
The pre-test would better be described as a first test, since students had studied these ideas by attending lecture, reading, and working exercises. The post-test was the final exam in which questions similar to those on the first test were used to measure improvements in student learning. The first and final frequencies of success were recorded. In between, students had the opportunity to improve their mastery by studying the first exam with instructor’s comments, meeting with the instructor individually, encountering the ideas again in different contexts in lecture and lab, and by revisiting their earlier studies.

3c. Physical chemistry.
A key discipline goal is that students should be able to understand “the conditions required for material change.” The second law of thermodynamics is the most general law governing material change. This suggested two related learning objectives that students should be able to apply the second law to

5 The numerical results are in the appendices.
i. phase changes and
ii. chemical changes.

The pre-and post-test strategies were essentially the same as those in analytical chemistry, with the exception that after the pre-test two concrete learning difficulties were identified, brought to the attention of the class through a couple of strategies, and then monitored on the final exam. One difficulty persisted and the other disappeared completely.


The American Chemical Society prepares comprehensive examinations in the subfields of chemistry. The organic chemistry test, which is meant to be administered after a year of study, has been used at UMM three times in recent years. In all three instances UMM students performed at two to five points above the national norms.

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<th>UMM Test Mean</th>
<th>UMM National Percentile</th>
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<td>43.3</td>
<td>48</td>
<td>62</td>
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<td>2002-3</td>
<td>38.7</td>
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<td>2006-7</td>
<td>43.1</td>
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General education categories spanned by the discipline

Most chemistry courses carry either the Sci-L or Sci general education designator for physical and biological sciences with lab or without lab, resp. Exceptions are directed study, chemistry seminar, and all one-credit\(^6\) laboratory courses, which have no general education designator.

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\(^6\) UMM policy is that a course must be worth at least two credits to satisfy a general education requirement.
Computer Science Discipline Assessment 2006-2007

Scope of assessment activities

___√__Course-embedded assessment

___√__ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___√__ Capstone experience

_____ Portfolio assessment

___√__ Standardized tests

___√__ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Computer science discipline goals. The goals for students are to
   • learn the fundamentals of computing including problem-solving skills, algorithm development, programming, and developing effective solutions through group activities
   • acquire appropriate communication skills for the field
   • develop a broader perspective of the computing field.

2. Capstone course: computer science seminar.
   2.1. Seminar I and II.
   The two seminars address specific discipline goals. Sophomore majors take Seminar I, where they learn the fundamentals of reading, writing, and presenting scientific literature, and study ethical issues in computing. In Seminar II, senior majors research a current topic in the field, and work one-on-one with a faculty member to develop a written document and professional oral presentation. The wide variety of options and presentations helps students achieve the desired broader perspective of the field. The course culminates in a professional style conference where the students present their papers.
2.2. Assessment tools.

All faculty and students attending the presentations in both seminars complete an evaluation. At the end of the Seminar II conference, the faculty meet for the formal assessment of the papers and presentations. The student papers are bound as a conference proceedings and archived.

2.3. Improving student learning.

This occurs at both the formative and summative levels. Students work one-on-one with faculty in developing their papers and presentations. They get feedback from the post-conference evaluations. Assessment of what used to be “Senior Seminar” led to splitting seminar into its sophomore and senior components. The split introduces ethical issues earlier in the curriculum, and provides students with increased and earlier opportunities to write and speak about the field.


3.1. Software Design and Development.

The discipline regards this as a core course in reaching the first set of disciplinary goals. Groups of students undertake a major class project, which becomes the focus of assessment. “Some of the changes in this course over time have included incorporating tools that allow the instructor to better assess a student’s contribution to the class project (bug tracking, code commits, software versioning, documentation, and testing tools). Since student learning in the course would seem to be connected to the amount they contribute to the project, the changing use of these tools over time is a story about assessing student learning in the course.”

3.2. Two courses: Introduction to Digital Media Computation; and Foundations of Computer Science.

These are entry level courses that used similar assessment tools. In both, student progress was tracked on certain topics or learning objectives, and course activity was adjusted based on the outcomes. The tools for tracking progress were quizzes, tests, and “whaddayaknows,” the last-named being assessments that did not contribute directly to the course grade.

3.2.1. The Digital Media course.

Several key learning goals are incorporated into this course. One of them is understanding the concept of recursion. Assessment suggested that the topic was introduced too late in the course’s first offering. As a consequence, the instructor not only introduced it earlier, but revisited it on a number of occasions. The final measurements of this learning objective showed a significant improvement in student learning of recursion.

3.2.2. The Foundations course.

Online quizzes provided instant feedback to students, and whaddayaknows feedback within a day or two. The exams used in the course became a kind of continuing pre-test/post-test assessment activity. The instructor used the results of one exam to guide learning activities, and used the next exam to assess whether these activities had improved student learning.

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7 Ibid.
4. Programming contests.

The check mark next to performance (above) refers to these contests. “Our students have been participating in the DigiKey programming contest for several years and have taken many of the top places. This is a regional contest that our students participate in by invitation.”

General education categories spanned by the discipline

Computer science courses all bear the M/SR, mathematics/symbolic reasoning, general education designator with the exception of seminar and directed study, which carry none.

8 Ibid.
Economics Discipline Assessment 2006-2007

Scope of assessment activities

___ √ Course-embedded assessment
___ √ Pre- and post-testing
_____ Outside the classroom
_____ Across the discipline

Direct measures of student learning

_____ Capstone experience
_____ Portfolio assessment
_____ Standardized tests
_____ Performance on national licensure, certification or preprofessional exams
_____ Qualitative internal and external juried review of comprehensive senior projects
_____ Externally reviewed exhibitions and performances in the arts
_____ External evaluation of performance during internships

Discussion and Description
Discipline goals, direct measures, and improved student learning

1. Economics discipline goals. The economics curriculum is designed to ensure that students

- understand the nature and functioning of the market system.
- are able to define criteria for assessing efficiency in the provision of goods and services.
- investigate and assess the operation of economic institutions.
- are able to evaluate alternative policies intended to enhance economic outcomes.
- develop competence in quantitative methods and computing methods.
- are able to conceptualize and analyze problems using the tools of economic theory, and communicate the results.
- are competent in oral and written communication.
- are adequately prepared for graduate or professional school.

2. Discipline goals and course work

The assessment plan relates discipline goals to the economics courses where they will be met.
3. Course-embedded assessment

*Money, Banking, and Financial Markets.* In this upper division class, the instructor identified two broad learning objectives that students should meet, and for each objective established three criteria for determining whether students had met them. The assessment tool was a multi-part in-class essay question administered two months into the semester and again near the end of the semester. The instructor then ranked each student’s performance on each criterion as good, fair or poor. The results\(^1\) show improvement in student learning that is more often dramatic than not.

General education categories spanned by the discipline

Almost all economics courses bear one of the following general education designators: SS, human behavior, social processes, and institutions; IP, international perspective; HDiv, human diversity; M/SR, mathematical/symbolic reasoning; Hist, historical perspectives; or Envt, people and the environment. Directed study and the seminar for social science majors bear no general education designator.

\(^1\) The numbers are in the economics discipline report in the appendices.
Education Discipline Assessment 2006-2007

Scope of assessment activities

- √ Course-embedded assessment
- √ Pre- and post-testing
- √ Outside the classroom
- √ Across the discipline

Direct measures of student learning

- √ Capstone experience
- √ Portfolio assessment
- √ Standardized tests
- √ Performance on national licensure, certification or preprofessional exams
- Qualitative internal and external juried review of comprehensive senior projects
- Externally reviewed exhibitions and performances in the arts
- External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Discipline overview
The curriculum is divided into three subcurricula, Education, Elementary Education, Secondary Education, and Education. Elementary Education is offered as a major, but Secondary Education is a licensure program in which the student majors in a discipline from one of the other Divisions: Humanities; Science and Mathematics; or Social Sciences.

2. Discipline goals
2a. Elementary and Secondary Education
The goals for Elementary and Secondary Education are designed to help students (future teachers) to
- acquire the knowledge, skills, and dispositions necessary to being a competent teacher

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2 Education is the fourth academic division at UMM.
• understand central concepts, tools of inquiry, and structures of disciplines taught in schools
• understand children and adolescents and their individual and group behavior
• plan and implement instruction adapted to learners of diverse backgrounds and abilities
• communicate effectively
• encourage critical thinking and problem solving
• use formal and informal methods of assessment
• collaborate with parents/guardians, families, school colleagues, and the community in an ethical manner.

These goals are based on the ten Standards of Effective Practice of the state of Minnesota.

2b. Education

The courses are designed to offer students the opportunity to study education and its role in society.

3. A three-fold assessment strategy in Elementary and Secondary Education

The discipline uses both internal and external measures of the degree to which students achieve the goals listed above. Three principal assessment tools are

• PRAXIS II exams
• summative evaluation scores for the final student teaching experience
• key assignments in the capstone course: portfolio assessment

4. PRAXIS II exams

There are two parts to these standardized, external exams, the PLT (Pedagogy, Learning and Teaching—or the pedagogy part for short) and the content part. The state requires that students pass both parts for licensure. In 2007 UMM had a 100% pass rate for both parts (29 students in Elementary Education and 25 in Secondary). During the 2002-2007 period, UMM students took content exams in eighteen areas, with pass rates exceeding state pass rates in fifteen of them, although in some instances the differences in rates are small and some small sample sizes vitiate the comparison.

Performance on PRAXIS II may also signal areas where student learning is problematic. One example is discussed in the discipline’s report, which details the problem, describes the faculty’s response, and documents the improvement in student learning. Another issue being addressed by the Elementary Education faculty is the presence of two students in the cohort of 2009 for whom English is a second language, the issue being whether PRAXIS II will fairly assess their learning.

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3 See Table One of the Education discipline’s report in the appendices. This table also summarizes results for all three assessment tools for the class of 2007.
4 Table II in the discipline report.
5. Summative evaluation of student teaching

Elementary and secondary education students complete eleven weeks of student teaching as their final field experience. During that field experience, they apply the knowledge and skills studied in the programs. In this experience, all ten Standards of Effective Practice are implemented and assessed. Cooperating teachers and university supervisors complete at least three formative evaluations that highlight strengths in performance and assist the student in identifying weaknesses. Goals are established, additional coaching is provided, and students are given the opportunity to address areas of concern. The summative evaluation assesses all of the program goals and is completed by cooperating teachers and university supervisors. Data from final field experience evaluations for the 2006-2007 cohort reveal that all but one student met minimum proficiency for licensure (please see Table One). No other student received less than an “average” rating on any part of their field experience evaluation. In fact, most earned high marks from cooperating teachers or university supervisors.

6. Key assignments from the capstone course: portfolio assessment

The goals of the capstone course are to
• facilitate professional reflection
• enable students to explore professional issues related to teaching
• assist students in evaluating the effects of their professional choices and actions on students, parents, other professionals, and the larger learning community.

The primary assessment of student learning in the capstone course is the professional portfolio created by students. Students begin creating this portfolio when they enter the program and continually revise it throughout. The portfolio has ten sections, one section for each of Minnesota’s Standards of Effective Practice—standards in which students must demonstrate competency before being licensed as teachers. For each standard, students write an essay that describes their growth and development in the standard, provides evidence of that growth and sets new goals for deeper understanding. This process again exemplifies the formative assessment built into the teacher education program. Students have multiple opportunities to write, reflect on feedback, and reconstruct their portfolio throughout the program. In this course, the students write their final statements. Each faculty member is responsible for evaluating 10-12 professional portfolios. Prior to the evaluation period, faculty members engage in a reliability session to ensure fair and reliable grading practices across faculty members. In this session, faculty read and grade sample essays and discuss the reasons for their grades and discuss any discrepancies. The process continues with multiple readings and discussions until the faculty are grading in a manner consistent with one another.

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5 The paragraphs in § 5-7 have been pasted almost entirely from the Education discipline report in the appendices.
7. Course-embedded assessment

All courses in the elementary and secondary education programs are crafted around the ten Standards of Effective Practice. Lectures, readings, and assignments are linked to specific standards and the links are usually recorded on the syllabus. The courses also are based on mastery learning. This means that students must perform all tasks at a proficient level. If a student does not successfully master a task, he or she continues to work on this task and repeat an assignment until it is mastered.

An example of assessment in one course is in Appendix 1 of the Education discipline’s report. Assessment is built around a teaching and learning strategies mini-unit assignment. The final goal is to have the student plan and teach the mini-unit to his or her practicum students, and then to assess their learning. The student’s mastery in turn is evaluated by the instructor by means of a scoring rubric that the student has seen in advance. The route to attaining this goal is laid out in an eight-step plan.

8. Students who fail to meet the requirements

The Education discipline’s report notes that its “data clearly show that most of the students far surpass the minimum requirements set by our own program and those of the state and national accreditation agencies.” The discipline’s faculty continues to seek ways to assist the rare student who does not self-select out of the program but is struggling to meet its requirements.

General education categories spanned by the discipline

Many Education courses but by no means all carry one of the general education designators: IP, international perspective; Hum, communication, language, literature, and philosophy; E/CR, ethical and civic responsibility; or FL, foreign languages. Only two courses in Elementary Education and only two in Secondary carry designators, one IP, and one HDiv, human diversity, in each of the subcurricula.
English Discipline Assessment 2006-2007

Scope of assessment activities

- √ Course-embedded assessment
- √ Pre- and post-testing
- Outside the classroom
- √ Across the discipline

Direct measures of student learning

- √ Capstone experience
- √ Portfolio assessment
-  Standardized tests
-  Performance on national licensure, certification or preprofessional exams
-  Qualitative internal and external juried review of of comprehensive senior projects
-  Externally reviewed exhibitions and performances in the arts
-  External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. English discipline objectives. Students learn to
   - discuss, orally and in writing, what they have read: how the author has structured the text, and how literary language achieves its effects and directs the readers’ response to the text.
   - be effective critical and imaginative readers and writers.

The English program engages students in the study of primarily British and American literature of different periods, with an emphasis on various approaches to literary study.

2. Assessment across the discipline. This is achieved through a three-fold approach of assessing
   i. the college writing program
   ii. the gateway course to the major
   iii. the capstone course.

6 The complete assessment report is in the appendices.
In all three instances, there are variations on the pre-test/post-test method (testing = annotating or writing) and strategies for improving student learning.

3. Assessment of College Writing.
3a. Overview.
College Writing fulfills a general education requirement for all UMM students. The current course goals are the result of English faculty deliberations in 2002-2003 that align their concerns with those expressed in a cross-disciplinary survey of the college faculty.

3b. Three broad goals. Students should be able to
- state an argumentative thesis clearly at the beginning of a paper.
- analyze (rather than merely summarize) evidence for that thesis.
- appropriately revise the paper’s content and/or form in response to peer and instructor feedback.

3c. Specific learning objectives. By the end of the course students should be able to
- understand and recognize the basic conventions of effective academic writing.
- articulate a specific and argumentative thesis.
- develop and organize an argument.
- supply and analyze appropriate evidence in support of a claim.
- understand citation norms and use an appropriate citation format.
- paraphrase, summarize, and effectively quote sources.
- locate sentence-level errors in their writing and find answers/help in a reference book.
- understand writing as a process (planning, drafting, revising, editing).
- make meaningful and substantive revisions in their own work.
- offer constructive comments, both in writing and orally, on peers’ work.

3d. Portfolio assessment.7 Students wrote three drafts of each required paper. The final portfolio consisted of the third draft of all papers. For each draft and for each of the three broad goals in 3b, the instructor rated each student in one of three categories: having mastery; having competence; or lacking competence. This method measured the degree of achievement of course goals and the degree of improvement for each student. The set of ratings for the semester measured achievement and improvement for the class as a whole.

3e. A conclusion and moving forward.
The instructor concludes that “our current methods of assessment in these areas are generally successful.” She states that two English faculty have been awarded a grant to revise the course syllabus to “result in more effective cross-disciplinary preparation for our students.”

4. Assessment of the gateway course. *Introduction to Literature.*
4a. Overview.

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7 The discipline report in the appendices gives numerical details of assessment in one eighteen-student section of college writing.
“This course was introduced in 2003 to address a substantial shortcoming in students’ preparation for upper-level English courses.”8 The vehicle for addressing this shortcoming is poetry analysis, a task that students find particularly difficult.

4b. Course learning objectives.9 They are to improve students’
   i. ability to READ carefully and actively.
   ii. ability to understand and discuss literature analytically, using the
       conventional terminology.
   iii. understanding of and ability to implement processes of making a critical
       argument.

4c. Assessment tool.

Students annotate a poem at three times during the semester. Each time and for each learning objective the student is rated as having mastery, having competence, or lacking competence. The instructor discusses the first annotation with the students, who then practice annotating in class with instructor feedback. The second and third annotations measure improvement and the degree to which the learning objectives have been met.10

4d. Future issues.

The English discipline is discussing, as any large discipline should, the problems that arise from having multiple instructors in the course who approach the material in slightly different ways. Another is issue is to make certain that students, who by and large are reaching the learning objectives, retain those abilities. The discipline is discussing whether an annotation exercise should be employed early in all of the survey courses to reinforce those skills.

5. Assessment of the capstone course. Research seminar.

5a. Overview.

All English majors must complete at least one research seminar from the list of ten in the 2007-2009 University of Minnesota, Morris Catalog.

5b. Learning objectives. The seminar adds two to those listed for the discipline:
   • the development of sophisticated research skills.
   • the ability to engage publicly with current debates in the field.

5c. Assessment tools.

In reaching the first objective, students must produce an annotated bibliography, which is judged on the number and quality of the sources, and on the quality of the annotations.11 The bibliography provides the basis for writing a substantial research essay, about ten pages in length.

To reach the second, students must give a fifteen to twenty minute oral presentation in the public English Research Symposium, which follows models of conferences attended by English academics. This includes being a member of a panel.

5d. Improving student learning.

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8 Ibid.
9 These are abridged from the full text in the appendices.
10 The appendices contain numerical results for sections from 2005 and 2007.
11 The discipline report discusses qualitatively the strengths and weaknesses of these bibliographies.
To address weaknesses in preparing annotated bibliographies, finding appropriate sources will be introduced into junior level survey courses, as well as the art of writing annotations, and more time will be devoted to sources in the seminar itself. Problematic bibliographies received faculty and conference attention. Faculty critiqued drafts of essays.

General education categories spanned by the discipline

Three English courses carry the CW, college writing, general education designator. Almost all others carry one of the following: Hum, communication, language, literature, and philosophy; HDiv, human diversity; ArtP, artistic performance; or Envt, people and the environment. The only exception is directed study, which carries none.
French Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment
___ √ ___ Pre- and post-testing
___ √ ___ Outside the classroom
___ √ ___ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience
____ Portfolio assessment
___ √ ___ Standardized tests
___ √ ___ Performance on national licensure, certification or preprofessional exams
____ Qualitative internal and external juried review of comprehensive senior projects
____ Externally reviewed exhibitions and performances in the arts
____ External evaluation of performance during internships

Discussion and Description
Discipline goals, direct measures, and improved student learning

1. French discipline learning objectives
   • An introduction to the four skills of communication in French: speaking, listening, reading, and writing.
   • Intermediate French: raising the level of sophistication in communication and broadening the cultural base to include French and francophone cultures.
   • Continuation of objectives 1 and 2; mastery of literary texts and initiation into critical approaches and sharpening analytical skills.
   • Application of objectives 1 through 3 above to original work in the field; post-baccalaureate employment and graduate study.

2. Two phases of assessment
   The Iowa Placement Test is used to assess the first two years of the major, i.e., the beginning and intermediate phases. The last two years, the advanced phase, are assessed using the American Council for the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines for Speaking and Writing.
3. Senior seminar
The senior seminar is the discipline’s capstone experience, in which the student produces a substantial scholarly or creative work at a level appropriate for an undergraduate. It requires intensive revision of a major writing assignment and a public presentation given in French.

4. First phase
The Iowa Placement Test (IPT) is used in a pre-test/post-test format. It is administered to all students who have had previous experience with French and wish to enroll in French. It is administered again at the end of second semester of beginning French, and for a third time at the end of the second year, i.e., at the end of the second semester of intermediate French. The IPT assesses reading, grammar, and listening comprehension skills.

5. Second phase
5.1 Writing proficiency. The third year of the major requires one semester courses in conversation and composition, and in reading and analysis of texts. Towards the end of the second semester of the third year, a writing sample is obtained and assessed using ACTFL guidelines. Students complete a second writing sample in the capstone course that is assessed with respect to the same guidelines and is compared to the third year sample.

5.2 Speaking proficiency. The oral presentation in the senior seminar is assessed using ACTFL guidelines.

6. Outcomes
6.1 First phase.
Student IPT scores are compared to a standard score representing the student’s preparedness for the next course in the major.\(^\text{12}\)

6.2 Second phase
On the basis of assessment, speakers and writers are placed in one of ten categories: superior; advanced (high, mid or low); intermediate (high, mid or low); and novice (high, mid or low).\(^\text{13}\)

7. Improving student learning
Assessment in the French discipline has led to the following initiatives.

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\(^{12}\) Results for the 2006-2007 academic year are in the French discipline report that is in the appendices.

\(^{13}\) See appendices for detailed results. For writing proficiency, senior seminar students ranged from advanced-high to intermediate-high. For oral proficiency, the same group ranged from advanced-high to intermediate-mid. The author of the report in the appendices notes that “study abroad is not a reliable predictor of higher levels of proficiency in writing,” but cautions that the sample size is small. The predictive power of study abroad is better for oral proficiency, but not clear-cut.
• Four new courses will weave grammar instruction through all four years of coursework. These are courses in phonetics, translation, advanced grammar, and business French.
• A system of one credit “maintenance” courses will allow students to practice oral skills in a more intimate setting.
• A professionalization component has been introduced into the senior seminar for which students prepare resumes, curriculum vitae, and cover letters in French, participate in mock interviews in English, and research (and in some instances even apply for) jobs using their French skills. These are recent initiatives whose efficacy will be assessed.

8. Possible forms for future assessment

At the present time, only language proficiency is assessed systematically. However, nearly all of the advanced courses in the curriculum have a cultural focus, which is also a significant component of the first and second year courses. The discipline will be discussing whether and how to assess the acquisition of cultural knowledge.

General education categories spanned by the discipline

Almost all French courses bear one of the following general education designators: FL, foreign language; IP, international perspective; Hum, communication, language, literature, and philosophy; or Hist, historical perspectives. Directed study and senior seminar carry no general education designator.
Geology Discipline Assessment 2006-2007

Scope of assessment activities

- √ Course-embedded assessment
- √ Pre- and post-testing
- ______ Outside the classroom
- ______ Across the discipline

Direct measures of student learning

- ______ Capstone experience
- ______ Portfolio assessment
- ______ Standardized tests
- ______ Performance on national licensure, certification or preprofessional exams
- ______ Qualitative internal and external juried review of comprehensive senior projects
- ______ Externally reviewed exhibitions and performances in the arts
- ______ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Geology discipline goals. The geology curriculum
   - serves those interested in a broader knowledge of their natural environment and the geological sciences as part of their liberal arts education
   - provides a firm foundation in geology, related sciences, and mathematics for students interested in the investigation and solution of geologic problems
   - prepares students for graduate study in the geosciences and related areas
   - provides the necessary background in earth science for those who plan to teach this field at the secondary level
   - serves those in other professional or interdisciplinary programs who need geology as a related subject.

   The pre- and post-test format is used in some courses. However, no information is available for this report.
General education categories spanned by the discipline

Most Geology courses carry either the Sci-L or Sci, physical and biological sciences with or without lab, resp., general education designator. One carries the Envt designator for people and the environment. Directed study, geology senior seminar, and geology senior seminar presentations carry no designator.
German Discipline Assessment 2006-2007

Scope of assessment activities

___✓__Course-embedded assessment
___✓__Pre- and post-testing
_____ Outside the classroom
_____ Across the discipline

Direct measures of student learning

_____ Capstone experience
_____ Portfolio assessment
___✓__ Standardized tests
___✓__ Performance on national licensure, certification or preprofessional exams
_____ Qualitative internal and external juried review of comprehensive senior projects
_____ Externally reviewed exhibitions and performances in the arts
_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. German discipline learning objectives
   • Comprehension and speaking in the target language.
   • Reading skills.
   • Reasoning and writing skills (includes word processing).
   • Cultural immersion through study abroad programs.
   The assessment plan lists expected outcomes for each objective.

   Beginning German. A placement test is administered to students who have had previous experience with German and wish to enroll in German at UMM. It is administered again at the end of second semester of beginning German. Results for the second administration are used for two purposes:
   i. to gauge student learning during the year of beginning German.
   ii. to gauge student readiness for advanced work in German.
   The first purpose is undermined to some degree because not all students who enroll in beginning German take the placement test, some because they have had no
previous experience with the language, and some for reasons that are not clear. However, all who take the pre-test show improvement on the post-test.

The results of the first administration of the placement test are used to recommend whether the student should enroll in first-, second- or third-year courses. Hence, the results of the second administration can also be interpreted as a measure of the student’s readiness for advanced work. For students finishing beginning German in the springs of 2005 and 2006, 34.3% tested at the first-, 51.4% at the second-, and 14.3% at the third-year level.

3. Other

Additional information about assessment in German may be found in the German assessment report in the appendices.

General education categories spanned by the discipline

German courses carry one of the following general education designators: FL, foreign language; IP, international perspective; ArtP, artistic performance; or Hum, communication, language, literature, and philosophy. Directed study and the senior project carry no general education designator.
History Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. History discipline goals. Students will
   • approach individual and group decision-making with an awareness of a broad range of choices, demonstrating an empathy to alternative responses to life’s questions.
   • be able to think critically and communicate their ideas effectively.
   • integrate their academic study with their intellectual and moral maturation.
   • understand the construction of historical knowledge.
   • have learned how to learn.

2. History capstone experience
   The capstone is a two-semester tutorial in a culminating historical research project. Assessment revealed two problems in earlier versions of the course. Not all students
   • chose a research topic in a timely way.
   • chose a research adviser in a timely way.
The discipline response has been a two-fold revision of course procedures.
   • Students must submit three possible research topics to the discipline coordinator by a specified date.
• The discipline faculty as a group assigns research advisers from its ranks. The new procedures will be assessed.

3. Assessment in the adviser/advisee relationship

A close working relationship between adviser and advisee is essential for meeting disciplinary goals because the major has few specifically required courses. Adviser and advisee meet to plan a curriculum of proper breadth and depth. When the student applies for graduation, the student and adviser meet to
• document that the student has successfully demonstrated breadth across regions and time periods in the major.
• discuss ways in which the student perceives history and historical questions as a result of thinking about history at UMM.
• evaluate what historical skills and knowledge the student has gained while studying history at UMM. Supporting evidence of such skills and knowledge may include successful papers, tutorials, student initiated studies, etc.

The adviser must keep a record of this meeting.

4. Course-embedded assessments

During the 2006-2007 academic year, history faculty members assessed student learning in six courses, three of them introductory and three of them specialized courses.

4.1 Pre-test/post-test methods. This was the first time that several instructors used this method. It will be refined and used again.

World History to 1500. The pre- and post-test for different topics showed different degrees of factual recall by students for different parts of the course. Apparently pedagogical techniques influenced the degree of retention. Through this assessment, the instructor sees the necessity of clarifying the conceptual framework of the second part of the course.

Introduction to U. S. History. The pre- and post-test, administered on the first and last day of class, sought to measure both student thinking about history as well as factual recall. Results for the latter were mixed, students doing less well identifying a single-theme approach to U. S. history, but quite well on questions about primary and secondary sources, and on the notion of public memory. They did fairly well on the former, viz., on open-ended questions addressing central themes from various books read for the course. The instructor infers from assessment that more in-class interaction between students and instructor may enhance student learning.

Latin American History: A Basic Introduction. The pre-test did not work well, so the post-test was not used. The pre-test/post-test model will be redesigned for the next offering of the course.

Modern Europe. Multiple choice, open answer, yes/no and chronological ordering questions were used on the pre-test/post-test. Yes/no was not an effective tool. Students showed great improvement in the chronological ordering section. The assessment indicated which topics required additional instructional time. The instructor has decided to use a different assessment model for her Nazi Germany course, one with special attention paid to different learning styles.

Ancient Maya Civilization. The average pre- and post-test scores were 10 % and 77 %, resp. In the post-test, no student scored less than 50 %.
4.2 Use of student assessment in conjunction with written work and class discussion

*Red, White, and Black: Race/Culture in Early America.* Students assessed how well the course met the four substantive and six process goals of the course. Overall they expressed the opinion that greater success was achieved with the former than the latter. These opinions coupled to written work and class discussions led to a strategy for improving student learning. “Since the written work and discussion had demonstrated, for example, students’ increased critical stance toward the sources and greater sensitivity to the making of historical ‘truth,’ the instructor concluded that he needs to make more explicit connection between the stated goals and substantive discussions as the course progresses.”

**General education categories spanned by the discipline**

Almost every history course carries one of four general education designators: Hist, historical perspectives; IP, international perspective; HDiv, human diversity; and SS, human behavior, social processes, and institutions. Directed study and the capstone course carry no general education designator.

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1 Quoted from the discipline assessment report of May 22 2007, which is in the appendices.
Management Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

_____ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Management discipline goals. Management students will
   • understand and use a variety of techniques to manage financial, human and material resources
   • be able to critically conceptualize business problems and to develop appropriate strategies for problem solving
   • understand and use a variety of quantitative analysis techniques appropriate for business
   • develop collaborative skills
   • be competent in written and oral communication
   • develop competence in computer skills
   • be prepared for professional careers in business or public service, or for graduate studies
   • be able to see relationships between management and other liberal arts disciplines.

2. Discipline goals and course work
The assessment plan relates discipline goals to courses both within and without the discipline where they will be met, and to the completion of projects inside and outside of courses.

3. Course-embedded assessment

Financial Management. The instructor set three learning objectives for the fifteen week semester, one objective for each five week subdivision of the semester. The objectives were specific instances of the general discipline objectives.2 The instructor used exercises and homework assignments to assess student learning as excellent, good, fair or poor. These results indicated where student learning was adequate and where it needed improvement; the instructor adjusted his teaching as needed. At the end of the five week period, student learning was again assessed, but this time with an examination.3

General education categories spanned by the discipline

Almost all management courses bear one of the following general education designators: SS, human behavior, social processes, and institutions; IP, international perspective; HDiv, human diversity; M/SR, mathematical/ symbolic reasoning; or E/CR, ethical and civic responsibility. Directed study, principles of accounting, and the management internship bear no general education designator.

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2 For example, the first objective, “Understand the principles of asset pricing and be able to price financial assets, such as stocks and bonds,” spans several of the eight learning objectives listed in § 1.

3 The quantitative results are in the management report in the appendices.
Mathematics Discipline Assessment 2006-2007

Scope of assessment activities

____√____Course-embedded assessment

____√____ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

____√____ Capstone experience

_____ Portfolio assessment

____√____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Mathematics discipline goals
   • to help students develop competence in mathematical techniques and methods
   • to sharpen students’ mathematical intuition and abstract reasoning as well as their reasoning from numerical data
   • to encourage and stimulate the type of independent thinking required for research beyond the confines of the textbook
   • to provide students with the basic knowledge and skills to make mathematical contributions to modern society
   The curriculum prepares students to enter graduate school, pursue careers in applied mathematics, or teach mathematics

2. Math senior seminar
   The senior seminar is the principal assessment vehicle in the mathematics discipline. The seminar has been assessed annually since the 2003-2004 academic year.
Each student majoring in mathematics works for two semesters under the guidance of a faculty advisor to produce a piece of individual research. Students are expected to

- extend a mathematical concept from a primary paper in the literature

or

- use multiple references to obtain an understanding of a mathematical concept

and

- strive for some degree of originality in their project.\(^4\)

The research product is a ten-to-fifteen page paper and a forty minute public presentation.

The mathematics faculty works closely with each student during the run-up to the presentation. Student and advisor meet periodically. Prior to the presentation, the entire mathematics faculty reads near-final drafts of all of the papers, then meets as a body with each student to critique and encourage the work, and to offer suggestions for the presentation and/or paper.

Although the faculty advisor assigns the final grade, the entire mathematics faculty meets to discuss the presentations and to ensure consistency in grading. Students receive feedback through two vehicles: the advisor’s evaluation of the paper; and the assessment sheets filled out by audience members at the presentation, which provide opportunities for both numerical ratings and evaluative comments.\(^5\)

The faculty meets at the end of the academic year to evaluate the most recent round of papers and presentations. This is the touchstone for improved student learning. The author of the 2006-2007 assessment report writes, “All students showed mathematical growth by the end of their senior seminar experience. Overall, the faculty feel that this was a very successful year of senior seminar.” The annual critical assessments of the senior seminar have led to the mechanisms that made possible the growth and success noted in the two quoted sentences, viz., the explicitly detailed guidelines and timeline, the close-mentoring by one faculty member and the wide-mentoring by all faculty. Two changes are planned immediately based on this ongoing assessment.

3. Course-embedded assessment

The 2006-2007 report gives examples of how three instructors of Calculus I used course-embedded assessment to improve student learning. One instructor used an assessment/feedback/reassessment model to improve student understanding of functional notation. A second required that students demonstrate proficiency in four areas before receiving any credit whatsoever for an exam. A third used a glossary quiz at the beginning and end of the semester to assist students in using mathematical nomenclature precisely.\(^6\)

A fourth instructor of calculus sought to improve student learning in the subject by making the use of Mathematica, a powerful software tool in mathematics, more

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\(^4\) The three bullets are direct quotes from “Mathematics Discipline Assessment 2006-2007” prepared by Professor Barry McQuarrie that is in the appendices to this report.

\(^5\) Numerical data for the 2006-2007 academic year may be found in the appendix.

\(^6\) Again, numerical data are in the appendix.
appealing. Overall his assessment showed more frequent use of and a better attitude towards Mathematica, but the cognitive impact was not measured.

4. Putnam Mathematical Competition
The Putnam is a national exam. Two UMM students took the exam in 2006, having prepared for it by taking the Problem Solving Directed Study. They ranked 747th and 1089th out of 3640 participants.

5. Placement in Beginning Mathematics
The mathematics discipline makes recommendations on whether beginning students should enroll in basic algebra, precalculus, first- or second-semester calculus. The recommendation is based on student success with a placement exam administered during summer registration and on the students’ high school record in mathematics. In the fall of 2006 the discipline collected data correlating the recommendation, the course actually taken, and success in the course. It believes that any change would be premature based on this data set alone, and will continue to collect data annually. It is anticipated that the placement exam will be “revisited” in the near future.

6. Course Planning
During the 2007-2008 the mathematics faculty will discuss its freshmen and sophomore level courses with an eye to increasing their number and variety for both majors and non-majors.

General education categories spanned by the discipline

Mathematics courses all bear the M/SR, mathematics/symbolic reasoning, general education designator with the exception of a few courses bearing none (basic algebra, precalculus, directed study, history of mathematics).

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7 See Computer Assisted Calculus Education Project in the appendices.
Music Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

___ √ ___ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Music discipline objectives. The music curriculum
   • cultivates familiarity with the traditions of Western and non-Western music through theoretical analysis, research, performance, and historical survey
   • fosters the development of the critical ability necessary to understand those traditions
   • cultivates the experience of the unique relationship between research and performance in music.

Theoretical and practical courses that provide a sound academic background in music are available for those who intend to pursue graduate study, teach, or fulfill general education requirements.

2. Course-embedded assessment. Pre-test/post-test
   Conducting techniques: instrumental and choral conducting skills. The course learning objectives are:
   • The ability to conduct various meters and tempos, i.e., the fundamentals of conducting movements
   • Identify and demonstrate clear cues and musical expression
• Gain the ability to hear the music on the printed score and identify errors or inaccuracies in performance by ensemble
• Have a clear reference to music terms found on the respective music score
• Communicate through gestures the needed musical expression indicated by the score
• Make the critical decisions needed to interpret the composer’s intentions as seen in the score of music
• Develop a clear perspective of musical analysis enabling one to interpret the musical score.

Conducting project examples. There textbook has a series of “conducting project examples” with benchmarks to be attained for each. The instructor prepares students in the basic skills for each example.

Pre-test phase. The student conducts the example, which is video-taped. The instructor, the student-conductor, and other students in the class rate the student-conductor’s performance from one to ten for each benchmark.8

Improving student learning. The instructor and student-conductor review the videotape in light of the numerical ratings, and work to reinforce successful moves and analyze unsuccessful ones. If many students in the class displayed the same shortcomings, the entire class focuses on these.

Post-test phase. There are three parts.

1. The instructor and students come to an agreement on the benchmark ratings for each example.
2. The instructor provides comments on each student’s progress.
3. As part of the final exam, students review all of their videos and write a narrative on their progress in conducting.

General education categories spanned by the discipline

Each music course bears one of the following general education designators: FA, fine arts; ArtP, artistic performance; M/SR, mathematical/symbolic reasoning; Hum, communication, language, literature, and philosophy; or Hist, historical perspectives. Exceptions are concert attendance, five techniques courses, two conducting courses, form and analysis, directed study, and senior project, which carry no general education designator.

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8 In the full report in the appendices, the instructor reflects on the superiority of the numerical rating scheme over comments alone from other class members.
Philosophy Discipline Assessment 2006-2007

Scope of assessment activities

- Course-embedded assessment
- Pre- and post-testing
- Outside the classroom
- Across the discipline

Direct measures of student learning

- Capstone experience
- Portfolio assessment
- Standardized tests
- Performance on national licensure, certification or preprofessional exams
- Qualitative internal and external juried review of comprehensive senior projects
- Externally reviewed exhibitions and performances in the arts
- External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Philosophy discipline objectives. The philosophy program offers students the opportunity to
   - study the works of significant figures in philosophy
   - investigate the fundamental problems and systems of thought that frame philosophical inquiry
   - develop the ability to think and write critically and effectively
   - cultivate the logical, analytical, and conversational skills necessary for stimulating and fruitful philosophical inquiry.

2. Capstone course. Senior philosophical defense.
   There are five primary goals for this course, which aim at ensuring that the student can
   - give a clear, in depth written exposition of some view in philosophy
   - defend or criticize some view in philosophy
   - give a clear oral presentation of some view in philosophy
   - give a clear oral defense of some view in philosophy
• conduct a thoughtful discussion with peers and faculty on some view in philosophy.

During the course philosophy majors develop a substantial piece of philosophical writing, produce multiple drafts in response to comments from the whole philosophy faculty, and then orally defend the thesis.


The philosophy faculty’s practice has been to discuss “the achievement of the program’s and defense’s goals only orally at the end of the majors’ senior defenses.”

That is, the degree to which each philosophy major achieved specific discipline and defense goals has not been measured quantitatively in the past. This will change next year with the introduction of numerical assessment tools that the faculty will use for each student and each programmatic/defense goal. See Faculty Senior Philosophical Defense Questionnaire and the Faculty Philosophy Questionnaire included in the appendices.


Introductory ethics. This course has no prerequisites and would be the introduction to formal philosophical discourse for many of the forty-five students in the course. The instructor, in a context that had nothing to do with course grades, sought to measure students’ “ability to present and critically evaluate arguments from our texts.” The texts used for pre- and post-test were philosophical essays of comparable difficulty. The students’ twofold task in each was to “present a valid numbered argument” about the essay and to “identify premises that were vulnerable to criticism.” These tasks, of course, are a subset of the discipline’s goals. The pre-test was given during the seventh week of the semester after students had been exposed to philosophical terms and methods. The post-test was given at the end of the semester. Only a small fraction of the students on either test successfully completed the task, but whereas in the pre-test almost everyone was far from success, almost everyone on the post-test was on the “right track.” The instructor reports that this assessment tool suffered from its “all-or-nothing” design—students were successful or not. In the future he will use a sliding scale, will use articles and opinion pieces from the popular press in addition to philosophical essays, and will similarly measure student progress in acquiring conversational skills.

5. Student evaluations of the program

The philosophy faculty has relied heavily on student opinions of the major for making programmatic changes. Examples of these student surveys are included in the appendices.

General education categories spanned by the discipline

Each philosophy course carries one of the following general education designators: Hum, communication, language, literature, and philosophy; M/SR,
mathematical/symbolic reasoning; E/CR, ethical and civic responsibility; SS, human behavior, social processes, and institutions; or Hist, historical perspectives. Exceptions are directed study and the senior philosophical defense, which carry no general education designator.
Physics Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment
___ √ ___ Pre- and post-testing
______ Outside the classroom
______ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience
______ Portfolio assessment
______ Standardized tests
______ Performance on national licensure, certification or preprofessional exams
______ Qualitative internal and external juried review of comprehensive senior projects
______ Externally reviewed exhibitions and performances in the arts
______ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Physics discipline learning objectives. Students will
   • acquire an understanding of the concepts of classical and modern physics
   • learn to formulate and solve quantitative problems
   • acquire the ability to experimentally investigate physical phenomena
   • learn to communicate, in form and content, both verbally and in writing, the results of scientific work.

The goals of this course reflect discipline learning objectives:
   • Familiarization with current research topics in physics.
   • Familiarization with how to search and read physics research literature.
   • Develop skills of expository scientific writing.
   • Develop skills of oral presentation of scientific ideas.
   • To apply undergraduate knowledge in physics to current research topics.

Through a collaborative process with other students and faculty, each student develops a proposal to study a topic of current research interest in the physics
community. After approval of the topic, the student works with an assigned faculty advisor to develop the paper and oral presentation. The end products are a written report and an oral presentation. (Drafts and practice presentations are required.) The physics faculty meet to judge the extent to which each student came to understand the topic, how well the student utilized the research literature, and how well the student presented the topic in both written and oral presentations. The faculty also discuss how the course could be altered to increase students' achievement of the course objectives.

In the past year or two, the faculty observed a need for more structure in the course to keep students on track during the long periods of time allotted to study and writing. As of the fall of 2007, the faculty implemented a series of new milestones in the course in order to provide such structure. These milestones will encourage students to stay on track and will provide more opportunities for specific and detailed feedback from faculty as students are working on their papers and presentations.

A couple of years ago, the faculty observed that some students were having difficulty selecting topics for senior thesis projects. Due to a lack of awareness of current research, the students were taking too long to identify a topic, which resulted in less time to do the requisite study and writing, and contributed to poorer outcomes. In part to address this, the physics discipline created a course known as the "journal club," in which students interact with current research literature in physics in a more informal, discussion-based format. One goal for the journal club was to expose students to current research topics earlier in their undergraduate years so that they would have a better start on the first two objectives of senior thesis. Because this new course has only been in place for two years, this fall will provide the first opportunity to observe whether this makes a difference for students in Senior Thesis.

3. Course-embedded assessment. Pre-test/post-test
Stars, galaxies and cosmology.

This is a general education course without lab in the physical science category. The instructor uses a variation of the pre-test/post-test method with a variety of experiences in-between to enhance student learning. An example is the distance modulus equation, which relates the apparent and intrinsic brightness of a star to its distance from the observer. The pre-test is a worksheet that the instructor collects, evaluates, and records a score for each student; the score provides both a benchmark for gauging improvement and an indicator of weaknesses and strengths in student performance. A quiz on the topic is used in the same way. Besides being used as assessment tools, the pre-test and exercises are graded for participation/effort. A problem on the midterm constitutes the post-test on this particular topic, gauges how successfully students mastered it, and provides one item for determining the course grade.

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3 The full exercise is among the discipline papers in the appendices.
General education categories spanned by the discipline

Physics courses bear one of two general education designators, either Sci, physical and biological sciences without lab or Sci-L, physical and biological sciences with lab. Journal club, directed study and senior thesis carry no general education designator.
Scope of assessment activities

_____Course-embedded assessment

______ Pre- and post-testing

_____ Outside the classroom

_____ Across the discipline

Direct measures of student learning

___✓___ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Three subfields

   Students majoring in political science must choose one of three subfields in which to concentrate their studies: American politics; international relations and comparative politics; or political theory. There is a capstone course for each subfield.

2. Political Science discipline learning objectives are
   - to be able to critically analyze, interpret and synthesize the major theories that are prevalent in a major subfield of political science
   - to become more empowered to participate in government due to increased familiarity with politics and government
   - to be adequately prepared for entrance into graduate or professional school.

3. Capstone courses for the three subfields

3.1. A fully implemented course.

   The course became mandatory for majors with the 2003-2005 UMM catalog. However, students can graduate from UMM under the requirements of any catalog in
effect during their enrollment, with the consequence that until the class of 2007, not all majors took the capstone course. However, the course is now fully implemented with all twenty-one majors who graduated in 2007 having taken it.

3.2. Capstone requirements.

Students write a scholarly paper and make an oral presentation of their results. They enroll in the course in the fall semester of their senior year. A minority of them finish in the fall, but most require both semesters to complete the requirements.

3.3. Assessment tool.

All faculty met to evaluate all papers and presentations with respect to eleven assessment criteria that reflect the three broad discipline goals. For each criterion, each student’s work is rated at one of three levels: failed to meet, met or exceeded expectations. “Expectation” refers to quality, that the quality was commensurate with a political science graduate at a top liberal arts college and would be suitable for presentation at a top undergraduate research conference. Among the criteria is whether the student demonstrates readiness for graduate, professional or law school.

3.4. Assessing student learning.

The author of the discipline report notes many positive results in this year’s capstone students: 50 to 75% of the students wrote well, showed good scholarly editing skills, gave good presentations, showed adequate knowledge of the field, and demonstrated an overall command of the material. On the downside, many of the papers would not be suitable for presentation at a top undergraduate research conference; many did not demonstrate proper methodological rigor, and had inadequate literature reviews as well as unclear or poorly developed hypotheses. The faculty judged that about half of the majors demonstrated readiness for graduate, professional or law school.

3.5. Improving student learning.

3.5.1. In the capstone course.

Now that the capstone course has been fully implemented, and the faculty has gotten a comprehensive and detailed look through the course at learning among its majors, a dozen changes have been recommended for the capstone course and its assessment. Some of the proposed changes are more or less mechanical in nature, but some are substantive: in the future the faculty will measure information literacy and the student’s ability to adequately contextualize the “fit” of their paper within the field; and there will be a greater emphasis throughout the curriculum on the differences between scholarly and non-scholarly sources.

3.5.2. In the program.

Four changes have been proposed. One change, the need to offer International Relations Theory annually, is driven by the failure of several students in the capstone course to demonstrate an adequate theoretical understanding of the field. The faculty also recognizes the need for major changes in the political theory subfield because of the poor papers and presentations by the two political theory students in the capstone course.

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4 Table 1 of the discipline report in the appendices gives the numerical results for each criterion.

5 See the discipline report for the full lists.
3.6. Student surveys.

Tables 2-4 in the body of the discipline report give numerical summaries of student self-assessment of the degree to which they have met the three discipline learning objectives. Their written comments appear in Appendix B. Appendix A is the survey instrument itself. The student surveys helped shape changes to the capstone course and the program.

General education categories spanned by the discipline

Political Science courses bear one of the following general education designators: E/CR, ethical and civic responsibility; SS, human behavior, social processes, and institutions; Hum, communication, language, literature, and philosophy; HDiv, human diversity; IP, international perspective; or Hist, historical perspectives. Exceptions are directed study and field study in political science, which carry no general education designators.

6 These tables and appendices are in the discipline report in the appendix to this report.
Psychology Discipline Assessment 2006-2007

Scope of assessment activities

√ Course-embedded assessment

_____ Pre- and post-testing

_____ Outside the classroom

√ Across the discipline

Direct measures of student learning

√ Capstone experience

_____ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or pre-professional exams

_____ Qualitative internal and external juried review of of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Psychology discipline goals are
   • awareness of the range of knowledge in psychology
   • competency in translating behavioral questions into the terms of scientific inquiry
   • competency in reading and critically synthesizing the technical literature in psychology
   • competency in quantifying and statistically analyzing behavior
   • awareness of ethical issues in psychology.

2. The Capstone Course: Advanced Seminar.

   A major change as a result of assessment was a revision of the existing capstone requirement, the Empirical Investigations (EI) courses. As noted in previous assessment summaries, the EI was an effective evaluation and capstone tool. However, even after reconfiguring it into a two-semester sequence, the EI had become too onerous a task with too many students failing to complete it in the time allotted. Research experience is vitally important for students who are capable and motivated to pursue doctoral study in psychology. However, many students do not meet those needs or goals. The result in
those cases was a tremendous amount of “hand-holding,” leaving the capstone purpose in some doubt. Again, by consulting its goals and resources, the discipline developed a new capstone requirement. The Advanced Seminar course is intended to serve as a capstone experience for psychology majors, which means that its purpose is to both unify and provide a broader context for knowledge about the field of psychology gained throughout the undergraduate years. To accomplish this, students will:

- demonstrate their ability to read and critically synthesize primary source material;
- add to the collective knowledge and understanding of the seminar class members through preparation and active participation;
- investigate a topic within a broader topic (e.g., “addictive behaviors”) in depth;
- lead a seminar discussion focused on their chosen topic;
- communicate their findings in an extensive written report and public presentation.

For the seminar, course expectations and grading guidelines were developed as a discipline, but each section will be structured by individual faculty. Seminar students and all psychology faculty will be expected to attend the public presentations, allowing assessment across the discipline. Faculty will meet at the end of the academic year to evaluate the seminars. This type of capstone experience is also more in-line with other majors at UMM.

As noted, research experience is vitally important for students. One challenge will be for the psychology discipline to maintain the level of research opportunity with the required research experience removed from the major. Our intent is that quality and focus of research will improve with the removal of projects conducted just for the sake of getting them done. This will take extra effort on the part of faculty to encourage students to do research and success at adequately meeting students’ needs in this area will need to be assessed. One marker will be any change in the number of students engaged in UROP, REU, or other research experiences and another will be student participation in national and regional conferences.

3. Restructuring of major requirements

By monitoring advisee’s class choices since conversion to semesters certain deficiencies became apparent. Although psychology’s offerings covered the core areas of the field, and although the basic structure of the major remained consistent with what was once offered under a calendar based on quarters, the faculty found that students were taking a narrower selection of upper-level courses. Through comparisons with peer college’s psychology programs the faculty confirmed that the major

- required comparatively fewer course requirements
- offered markedly greater flexibility in what students may take rather than specifying credits to be taken within specific areas of the field.

The discipline’s response was to first increase the number of credits required for the upper-level electives from 16 to 20 credits. After monitoring that change for a year, it

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7 Undergraduate Research Opportunities, an all-University program.
was evident that a more thorough evaluation and reorganization of the major was in order.

Over the course of several lengthy meetings, the discipline reviewed the 2002 report by the American Psychological Association’s Task Force on Undergraduate Psychology Major Competencies, comparison college’s catalogs, and its own goals and objectives. It found that the goals and objectives stated for its students were consistent with those set forward by the APA task force, but that students could complete the existing program and not meet all of them. Specifically, students could complete the undergraduate psychology major by only completing upper-level courses within a couple core areas of the field, thus specializing knowledge prematurely.

The discipline’s solution was to start from scratch, armed with the information gained. By matching objectives, faculty expertise, and credit requirements, it restructured the major, keeping the number of required credits at 42 while assuring that students will receive upper-level background across core areas of psychology. Students will now take at least one course from each core category: Learning and Cognition; Biological and Comparative; Personality and Clinical; Developmental; and Social and Applied psychology. Students still have some flexibility, choosing among 3 to 6 courses within any one category, and the ability to take additional courses from any category to meet the credit total.

4. Course embedded assessments

Over the past several years, one of the psychology faculty, in conjunction with director of UMM’s Academic Assistance office, has systematically evaluated student studying skills and performance in the introductory psychology course. By identifying differences between successful and less successful students’ approaches to readings and course materials, they have developed an electronic guide for studying for introductory survey courses and the findings are now used as part of course instruction in the introductory psychology course. Further, the research has helped inform and develop programs now in place at the Academic Assistance office.

General education categories spanned by the discipline

Psychology courses carry one of the following general education designators: SS, human behavior, social processes, and institutions; HDiv, human diversity; Sci-L or Sci, physical and biological sciences with or without lab; IP, international perspective; Hist, historical perspectives; E/CR, ethical and civic responsibility. Exceptions are directed study and research practicum, which carry no designator.
Sociology Discipline Assessment 2006-2007

Scope of assessment activities

___ √___ Course-embedded assessment
___ √___ Pre- and post-testing
_____ Outside the classroom
_____ Across the discipline

Direct measures of student learning

___ √___ Capstone experience
_____ Portfolio assessment
___ √___ Standardized tests
_____ Performance on national licensure, certification or preprofessional exams
_____ Qualitative internal and external juried review of of comprehensive senior projects
_____ Externally reviewed exhibitions and performances in the arts
_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Sociology discipline goals
The sociology curriculum (along with support from anthropology courses) is designed to acquaint students with the concerns, theories, and methods of the science that focuses on groups, culture, and interpersonal relations of human beings. In addition to an introduction to sociology as a science, an effort is made to relate human values to the theories, methods, and data of sociology. Courses are designed to meet the needs of liberal arts students and those preparing for graduate school.

2. Sociology senior seminar
Senior seminar is sociology’s capstone course and its principal assessment vehicle. In this course the student produces a thirty page research paper and gives a twenty-five minute presentation derived from it. In the past it has been a one semester course but beginning in the 2007-2008 academic year will span an entire year. The capstone objectives are:

8 Appendix A in the sociology discipline report in the appendices is the ten page syllabus for this capstone course.
i. to introduce the nature, uses, and objectives of research by turning an interest or idea into research questions and even problem solutions;

ii. to construct an argument by making claims and qualifying them appropriately;

iii. to think about and evaluate sources with a visionary and critical (yet constructive) mind;

iv. to discuss the complexities of planning, organizing, and writing a research paper;

v. to understand the ethical issues and problems in the research and writing process;

vi. to learn how to communicate research effectively and efficiently.

Two types of projects are possible:

i. projects involving data analysis;

ii. theoretical projects.

The former almost always involves human subjects, which requires the approval of the University of Minnesota Institutional Research Board. Obtaining permission from the IRB constitutes an external assessment of the fifth course objective, which all senior seminar students reach, not always on the first attempt.

One instructor is responsible for guiding students through the seminar and assessing their performance. Assessment is continuous as she meets with the class as a group and one-on-one with students throughout the semester. She writes of her role in the third person as follows. “Prior to the presentation, Jennifer reads near-final drafts of all of the papers, meets with each student to critique and encourage their work and to offer suggestions for the presentation and paper.” She also reports, “All students showed growth in sociological understanding and critical thinking by the end of their senior seminar experience. Overall, I feel that this was a very successful year of senior seminar.” Students are encouraged to present their results in the college’s annual undergraduate research symposium, and, in some instances, to submit their work to scholarly journals.

Although other social science faculty are invited to the presentations, their participation has been spotty. The instructor hopes to expand her colleagues’ contributions to the seminar, particularly in its assessment.


Introductory sociology. This is the first course in the major and the course taken by many non-majors to satisfy the SS general education requirement (human behavior, social processes, and institutions). On the first and last day of class students were asked to give one sentence definitions of fifteen terms and were given the option of offering examples. Appendix B in the discipline report provides two years of data for classes of sixty-seven (falling to sixty-two by semester’s end) and forty-three students. In both instances, there is significant improvement from the first to last day, but in one instance it was observed that significant numbers of students were struggling with central

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9 The schedule in Appendix A (see n1) details day-by-day where the student should be in the process, as well as the instructor’s involvement along with other college resources such as its research librarians and the English discipline’s writing room.

10 See the main body of the discipline report in the appendices.
concepts of the introductory course. The instructor took this observation into consideration the next time she taught the course.

**Sociology of deviance.** The instructor uses a pre- and post-test of eight questions on the first and last day of class.\(^\text{11}\) Of particular interest are the changes in student responses to “How do you define ‘deviance’?” and “Who decides what is ‘normal’?” She tracks the responses of individual students and reports that over the past two years the class overall has shown improved understanding across the span of the semester.

**Sociology of gender.** The instructor for this course is the same as for the preceding, which is reflected in the similar format of the pre- and post-testing. For this course, there are twelve terms to define and one question to answer. As before, she tracks the responses of individual students and reports that over the past two years the class overall has shown improved understanding across the span of the semester.

**Women in Muslim Society.** The instructor lists three main objectives for the course and four methods for obtaining them. On the first and last days of class, students were asked to write on three questions of broad scope, one for each objective. The instructor reports that students moved from a state of almost complete ignorance to one where “their perspectives were broadening.”\(^\text{12}\) She states that the course objectives were successfully reached. There is no data on individual objectives.

4. Course planning

The instructor of the capstone course hopes to discuss during the 2007-2008 academic year the introductory courses in sociology and anthropology with an eye to increasing their number and variety for both majors and non-majors.

**General education categories spanned by the discipline**

Sociology courses carry one of the following general education designators: SS, human behavior, social processes, and institutions; HDiv, human diversity; IP, international perspective; Envt, people and the environment; or E/CR, ethical and civic responsibility. Exceptions are directed study, qualitative research methodology, quantitative research methodology, tutorial in sociological theory, and independent project seminar I and II, which carry no general education designator.

\(^{11}\) See Appendix B of the discipline report.

\(^{12}\) The report for this course is the last item in the discipline report.
Spanish Discipline Assessment 2006-2007

Scope of assessment activities

___ √__ Course-embedded assessment
___ √__ Pre- and post-testing
_____ Outside the classroom
_____ Across the discipline

Direct measures of student learning

___ √__ Capstone experience
_____ Portfolio assessment
___ √__ Standardized tests
_____ Performance on national licensure, certification or preprofessional exams
_____ Qualitative internal and external juried review of comprehensive senior projects
_____ Externally reviewed exhibitions and performances in the arts
_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Spanish discipline objectives. The Spanish curriculum is designed to help students
   • develop critical insight into the philosophy and values of another culture
   • gain fluency in a second language
   • gain sensitivity toward literature that reflects the experience of the Spanish-speaking world.
It accommodates liberal arts students interested in a cross-cultural perspective, language study, secondary school teaching, or preparation for graduate study in the field.

2. Capstone course: Research Symposium
   2.1. A new course.
   This new course will be required of all Spanish majors entering under Morris Catalog 2007-2009. It was not required of 2007 Spanish majors, since students can graduate under the requirements of any catalog in effect during their residency. However, four seniors chose to take the capstone course.
   2.2. Course objectives.
   The capstone experience consists of
• an introduction to research methods and critical approaches to literature
• the development of an independent research project and presentation.

2.3. Assessment tool.
Student learning was assessed in the areas of listening, reading, speaking, and writing using American Council for the Teaching of Foreign Languages (ACTFL) guidelines and rating categories. In addition, the instructor produced a written assessment of each research project, noting the critical approach used, and using a quantitative evaluative scale for four categories: originality of ideas; quality of research; persuasiveness of argumentation; and organization.

2.4. Rating student learning.
There are eleven rungs in the ACTFL ladder of ratings: distinguished, superior, and three levels (high, mid, low) each of advanced, intermediate, and novice. No student in any of the four areas of listening, reading, speaking, and writing was evaluated at less than advanced low, and some received a distinguished rating.

2.5. Improving student learning.
The author of the discipline report notes that in “reviewing the four papers we discovered that students did not recognize some situations where a particular theory would have been most appropriate for their discussions. We have decided therefore to introduce literary theory earlier in the curriculum [.]” This will be in a required third year course, Seminar: Origins of the Spanish Character. Students will study seven literary theories and write essays in which they apply them to the literature being read. Their mastery will be gauged on a five-step scale ranging from “does not understand the theories and how to apply them” to “shows exceptional skill in applying the theories.”

3. Course-embedded assessment. Pre-test/post-test
As part of the objective of gaining fluency in a second language, the Spanish discipline has sought to improve listening skills of students in Beginning Spanish II, the second semester of the introductory course.

The assessment tool is the Iowa Placement Exam in Spanish, the listening part consisting of twelve questions. The IPE is used to place first-year students in the proper course, either the first-or second-semester of the introductory course or beyond. The placement constitutes the pre-test. The IPE is again administered at the end of the second semester course, which constitutes the post-test.

The tool to improve listening skills is an eight-week series of listening exercises. Students
• listen to passages on compact discs developed by native speakers who have been UMM students;
• go through the passages with the instructor to resolve any problems of comprehension; and
• listen to the passages again.

Two groups of students were tested, those who had placed directly into Beginning Spanish II, and those who had placed into Beginning Spanish I and were now completing the second semester. On the pre-test, students rarely complete more than

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1 The author of the discipline report notes that “ratings were remarkably similar among faculty.” The author of this report notes that ratings were generally stronger in listening and reading than in speaking and writing.
half of the twelve questions correctly. On the post-test, the average successful completion rate was 6.5 to 7.0 of 12.

Two issues were identified that each elicited a response from the discipline.

i. The author of the Spanish assessment report notes that there was a “minimal change in listening skill.” Next year the listening exercises will last the entire semester rather than half.

ii. Interpreting the results was problematic because the two groups tested clearly differed in the knowledge and/or skills they possessed on entering college. The spring 2007 assessments now offer a baseline for those in spring 2008 to see if doubling the listening exercises improves student listening skills.

General education categories spanned by the discipline

Spanish courses carry one of the following general education designators: FL, foreign language; Hum, communication, language, literature, and philosophy; IP, international perspectives; or Envt, people and the environment. The only exception is directed study, which carries no general education designator.
Speech Communication Discipline Assessment 2006-2007

Scope of assessment activities

__√__ Course-embedded assessment

_______ Pre- and post-testing

_____ Outside the classroom

___√___ Across the discipline

Direct measures of student learning

___√___ Capstone experience

___√___ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Speech communication discipline objectives. Students
   i. develop a historical and theoretical understanding of the three areas of speech communication: rhetoric, communication studies, and mass media
   ii. use a variety of assigned theoretical approaches appropriate to these three areas to describe and evaluate assigned or chosen discourse
   iii. participate in a variety of oral communication assignments using informative and persuasive speaking techniques effectively.

The summaries below draw primarily on the report for the 2006-2007 academic year. Discipline objectives have been assessed annually. The corresponding reports, similar to the 2006-2007 report, dating from the 2002-2003 academic year, are at UMM’s discipline assessment web-site.4

2. Rhetorical studies
   Discipline objectives i) and ii) were assessed for rhetoric. For the first objective, two expected outcomes were identified. Students will

4 <http://www.morris.umn.edu/committees/asl/results/results.html>
be able to compare and evaluate various theoretical approaches
• demonstrate a sensitivity to the historical dimensions of theory building.
Data was drawn from student papers, which were evaluated with respect to three criteria. The data set for the first objective was deemed too small to be of value.
For the second objective, an expected outcome was identified.
• The students will be able to choose from a variety of methods to describe and evaluate a specific act or artifact.
Seven papers were assessed according to the same three criteria as for objective one. Students were ranked on a scale of 0-5 on their ability to cite and paraphrase sources, and to analyze discourse. The scores were averaged and recommendations made for program adjustments.5

3. Communication studies
Discipline objectives i) and ii) were assessed with the same expected outcomes as for rhetorical studies. Papers from two courses were reviewed but this time with respect to five criteria, the criteria reflecting crucial abilities and skills in communication studies. Once again, the students were rated on a 0-5 scale for each criterion, results averaged, and compared to performances from the previous year. Based on this assessment, recommendations were made for program adjustments.

4. Media studies and technology
Since the professor in this area was on sabbatical, this objective was not assessed in 2006-2007. The following describes the assessment in 2005-2006.6 Objective number ii) was assessed for electronic mass media. The expected outcome was the same as for the second objective under rhetorical and communication studies. Papers were evaluated with respect to five criteria that once again measured crucial abilities and skills of students of electronic mass media. All relevant papers in the students’ portfolios (vide infra) were reviewed. Once again, each criterion was evaluated on a five-point scale, results averaged, and compared to averages from previous years. The significance of the comparisons was discussed and recommendations made.

5. Personal portfolios
Students create personal portfolios which are evaluated collectively during the senior year.

6. Speech communication senior seminar presentations
Speech communication seminar in 2006-2007 provided the vehicle for assessing learning objective number iii) for the first time. There is an expected outcome.
• The students will be able to design and deliver effective messages through the oral communication channel.
The effectiveness of each of eight student speakers was assessed with respect to ten criteria on a 0-4 numerical scale. The averaged results will be a benchmark against which future assessments can be measured. The results indicate four areas where the student

5 Details are in the speech communication’s discipline report in the appendices.
6 This report is also in the appendices.
performance was particularly strong and two where improvement is needed. Overall, “the results do indicate that in the aggregate students in Speech Communication meet Learning Objective #3.”

General education categories spanned by the discipline

Almost all speech communication courses carry one of the following general education designators: E/CR, ethical and civic responsibility; Hum, communication, language, literature, and philosophy; IP, international perspective; SS, human behavior, social processes, and institutions; or HDiv, human diversity. Exceptions are directed study, directed experience in teaching speech communication, and speech communication seminar I, which have no general education designator.

Statistics Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

___ √ ___ Outside the classroom

___ √ ___ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience

___ √ ___ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

___ √ ___ Qualitative internal and external juried review of comprehensive senior projects

_____ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Structure of assessment activities in the statistics discipline

Assessment of student learning occurs in four areas:

• general education
• the statistics major and minor
• liberal arts statistical support system
• special areas of service learning/civic engagement and technology enhanced learning

The focus in this report will be on the major and general education, and on technology enhanced learning only to the degree that it bears on the two areas of focus.

2. Three phases

The assessment program is divided into three phases:

• setting forth the discipline’s mission, establishing learning objectives, delineating expected outcomes, identifying and organizing assessment methods and tools
• identifying possible uses and actions based on assessment
• improving student learning based on assessment data

3. Discipline learning objectives
• Students will gain the basic knowledge and skills to make statistical contributions to modern society, whether in the form of pure statistics or statistics applied to other disciplines.
• Students will sharpen their statistical intuition and abstract reasoning as well as their reasoning from numeric data.
• Statistics and statistics curriculum will enhance students’ critical thinking in domains involving judgments based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook.
• The curriculum will prepare students to enter graduate school, and pursue careers in applied statistics.
• The students will be able to see and communicate statistical ideas/results effectively and identify potential pitfalls of any statistical analysis.

Each learning objective is accompanied by expected outcomes.

4. Course-embedded assessment of the general education component
4.1 Learning checks
A learning check is a student’s performance on a statistical topic such as scatterplots or least-squares regression. Thirty checks are used every semester in every section of the two introductory statistics courses, Introduction to Statistics, with a high school algebra prerequisite, and the calculus-based Statistical Methods. This tool was implemented in 1997 when the college curriculum was based on the quarter system. The database has 3,986 points as of spring 2007.

4.2 Retention of student learning study
This study sought to measure the amount of information and types of skills that students retained after they had taken one of the introductory statistics courses. The tool was a new version of the comprehensive final exam previously taken. Students also filled out a comprehensive questionnaire that provided background information to help interpret the results. The results of the exams were converted into a quantitative “relative loss” parameter—how much information and skill had the student lost? On average, the forty-eight students who took the retention exam had taken introductory statistics 2.5 years earlier. The results were analyzed to see which kinds of information and skill were lost or retained, and whether there was a correlation to the instructor, the year the course was taken, the final course grade, and gender.

5. Capstone course and e-portfolios
5.1 Senior seminar
This is a year-long capstone course in which statistics majors demonstrate that they have met the discipline’s learning objectives. There is a three-fold assessment of
• student learning of basic statistical concepts
• the student’s ability to carry out research

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8 The full list is on page 18 of the discipline’s report, which is in the appendices.
9 Pp. 17-18 of the statistics discipline’s assessment report.
• [the] student’s ability to communicate findings

The vehicle for this is the presentation of a seminar on a statistical topic, which, besides the expected research by the student, entails weekly meetings with the faculty supervisor, interviews and oral exams. The seminar, with its research and presentation components, is evaluated by statistics faculty, faculty from other disciplines, other senior seminar students, and external individuals related to the project. These evaluations are analyzed statistically.

5.2 E-portfolio

Statistics majors keep a University of Minnesota E-Portfolio, which generates an “individualized student learning profile.” The profile characterizes students before enrollment at UMM, tracks their development as statisticians at UMM, and maintains a record of their professional lives after UMM.

6. Assessment driven actions

6.1 Driven by the need for effective communication

Past assessments “showed our students lacked the ability to communicate their findings correctly and effectively by using simple words that can be understood by non-statisticians,” those in question being both general education students and majors. The discipline’s response was to implement the Media Reports Project in conjunction with UMM’s Center for Small Towns and UMM’s External Relations unit.

6.2 Driven by the capstone course assessment

The discipline has placed greater emphasis on the theory of statistics in higher level courses, started the capstone project earlier, increased coverage of some topics, and redesigned two courses. It is seeking ways to enhance student learning in the areas of critical and independent thinking.

6.3 Driven by the retention of student learning study

The discipline is just completing the statistical analysis of data from this new initiative.

6.4 Driven by the Technology Enhanced Learning survey

“The discipline applied and received a grant to create a vertically and horizontally integrated technology enhanced learning environment...The project aims to respond to diverse ways of learning.”

7. Improving student learning

The most recent assessment identifies nine positive and three negative findings. The discipline has used its accumulated findings to compare earlier and recent statistics majors, 2003 being the dividing year. “It is hypothesized that the second [recent] stage would reflect the changes made based on the findings of the assessment of student learning process.” A classification and regression tree analysis indicates improved student learning especially in communicating statistical ideas effectively. There was no

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10 Ibid., p. 7.
11 Ibid., p. 12.
12 Ibid., p. 19.
13 Ibid., p. 21.
14 Ibid., p. 12.
statistically significant change in the critical thinking and independent thinking domains of the learning objectives.

General education categories spanned by the discipline

Statistics courses all bear the M/SR, mathematics/symbolic reasoning, general education designator with the exception of directed study, which bears none.
Studio Art Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

___ √ ___ Outside the classroom

___ √ ___ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience

___ √ ___ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

___ √ ___ Qualitative internal and external juried review of comprehensive senior projects

___ √ ___ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Studio art discipline goals

- Students will demonstrate a mastery of fundamental principles, formal strategies and technical skills in a variety of media and approaches to their use, as well as an understanding of relevant contemporary conceptual issues in the visual arts. This includes materials, techniques, the safe use of tools (for example, everything from paint brushes, potters tools, wheels, kilns, carpentry tools, and power tools, to printmaking presses and equipment), and the safe disposal of waste.

- Students will demonstrate a mastery of the skills of critical analysis of works of art and communication skills necessary for activities in the visual arts; this includes the ability to talk clearly, independently and thoughtfully about their own art as well as the art of others.

- Students will demonstrate a mastery of fundamental principles, formal strategies and skills in a variety of drawing, as well as an understanding of relevant traditional and contemporary conceptual issues in the medium.
• Students will demonstrate formal and conceptual competence in at least two disciplines in the studio arts, taking a one- and two-year sequence in two chosen media.
• Students will demonstrate knowledge of the major traditions and the cultural significance of the visual arts, an understanding of the historical and contemporary development of art and their place in it, and the relationship of art to self, culture, and society.

2. Learning objectives and course work
   The assessment plan relates learning objectives to the studio art and art history courses where they will be met.

3. Portfolios and course-embedded assessment
   The body of work produced by a student in a course is called the portfolio, which may then be graded. Course-embedded assessment relies heavily on critiques by the instructor alone, and by the instructor and class members together, with ongoing critiques being made as the portfolio grows in size from initial work to the entire body of work.

4. Portfolios, assessment across the discipline, the junior and senior reviews
   The portfolio for junior and senior reviews is a selection of work from completed and in-progress courses, making its assessment an assessment across the discipline. The student provides an artist statement for use by the review committee, which is comprised of studio art and art history faculty. The committee uses a review sheet to rank the work from 1-10 in nine different categories under the three broad headings of formal concerns, technical concerns, and conceptual and communication skills,15 and also provides written comments. Results of the review are given to the student, academic advisor, and discipline coordinator. The introduction of a uniform and consistent method of evaluating the junior and senior reviews dates back to a 2003 assessment.

5. Pre- and post-testing
   Pre- and post-testing occurs in drawing classes for both majors and non-majors. Comparison of a drawing from the first day of instruction with a final drawing allows the faculty member to assess student improvement. Faculty member and student discuss the drawings.

6. Outside the classroom, outside juror
   The studio art discipline has video and digital images dating from 1997 of the senior exhibit and all-student shows. This archived material is useful to students preparing exhibits. Since 2006 the discipline has used an outside juror to select works and write a statement for the annual show.

7. Other course-embedded assessments and learning activities

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15 The report in the appendices has biannual data for junior and senior reviews beginning in the fall of 2003 through the fall of 2006.
Quizzes, sketchbook exercises, response papers, class presentations, student-led discussions, group projects, and collaborative activities are used variously to assess the degree to which students have attained the discipline’s learning objectives. Print exchanges with other universities allow the work of UMM printmakers to be compared with that done at the regional and national level.

8. Assessment, improving student learning and the new capstone course

Discipline assessment of learning objectives since 2003 has revealed four areas of concern that are being addressed.

- Students on average do better in the junior review than in the senior. In response, the faculty has made the junior into a second year portfolio review, and integrated the senior review into the new capstone course, the senior art thesis.
- Students need more writing in the arts. The new capstone course has a writing component and there will be more writing in Basic Studio Drawing II.
- Students need more experience with framing and other exhibition skills. These experiences are part of the course description of the new capstone course.
- Students requested a major or minor emphasis in areas such as photography/digital imaging, drawing, and ceramics. These areas were added to the major in the spring of 2006.

General education categories spanned by the discipline

Studio art courses all bear the ArtP, artistic performance, general education designator with the exception of a few courses bearing none (directed study, senior review, senior exhibit, senior thesis project).

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16 Discussion abridged. See the assessment report in the appendices for more details.
Theatre Arts Discipline Assessment 2006-2007

Scope of assessment activities

___ √ ___ Course-embedded assessment

___ √ ___ Pre- and post-testing

___ √ ___ Outside the classroom

___ √ ___ Across the discipline

Direct measures of student learning

___ √ ___ Capstone experience

___ √ ___ Portfolio assessment

_____ Standardized tests

_____ Performance on national licensure, certification or preprofessional exams

_____ Qualitative internal and external juried review of comprehensive senior projects

___ √ ___ Externally reviewed exhibitions and performances in the arts

_____ External evaluation of performance during internships

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. Theatre Arts discipline learning objectives
   - To provide a fundamental knowledge of the art, discipline, techniques and history of the theatre.
   - To develop the ability to produce good theatre.
   - To develop an appreciation of quality theatre.

2. Capstone course: Senior Project.
   In this course, the student demonstrates competence in some area of theatre arts. The project might be completed independently, for example through a research paper or solo acting performance, or as part of a group effort. Acting, scenery, lighting, costume design, playwriting, and theatre history are some of the areas in which the project may be undertaken. All faculty are involved in the assessment of each project.

3. Portfolio assessment.
   The portfolio comprises all of the theatre work of significant value that students have done during their career at UMM, including items such as photographs, articles, notes, and performance and design projects. During their third year, students present
their portfolios at the weekly meeting of Theatre Arts majors for faculty evaluation. They continue adding to their portfolios and take them out into the world of theatre for interviewing.


Stagecraft. The course objective is for students to gain “knowledge and appreciation of the history, theory, tools, materials and techniques employed in the construction, painting, and shifting of stage scenery.” The pre-test is a multiple-choice exam administered at the beginning of the course. From the results the instructor determines which topics require particular emphasis and need particular attention in pre-exam reviews. An unexpected benefit was that students realized at the very beginning of the class what the instructor held to be important. The post-test was a multiple-choice final exam similar but not identical to the pre-test. The pre- and post-test averages were 44.5 and 85.9. No one failed the post-test.


Theatre Arts students have received recognition in externally reviewed performances. Most productions are assessed by outside evaluators. Some productions are evaluated by members of the audience immediately after the performance.

General education categories spanned by the discipline

Almost all Theater Arts courses carry one of the following general education designators: ArtP, artistic performance; FA, fine arts; or Hum, communication, language, literature, and philosophy. Directed study, Backstage on Broadway, London Theater Tour, and Senior Project carry no general education designator.

17 The quote is from the Stagecraft Assessment Report in the appendices.
Assessment of General Education

Overview. Almost all courses in the Morris Catalog 2007-2009 carry general education designators. Assessment by direct measures of student learning occurs course by course in the home discipline of courses with designators. Indirect measures are gathered by means of a survey of graduating seniors that has been done annually since 2002.

Relevant points about governance at UMM. Each discipline (department) belongs to one of four academic divisions\(^1\). A small program of interdisciplinary studies is administered by the Vice Chancellor for Academic Affairs and Dean. The Campus Assembly is the college’s legislative body, consisting of its faculty, academic staff personnel, elected student members, civil service personnel holding the title of associate vice chancellor for physical plant and master planning, registrar, or director, and elected civil service/staff members. Total membership for the fall of 2007 is 222.

The General Education Program. Students must complete 120 semester credits to earn the B. A. degree. Of those credits, 60 must be outside the discipline of the major and distributed across three categories: First-Year Seminar; Skills for the Liberal Arts; and Expanding Perspectives. The Skills category is further divided into four subcategories and the Perspectives into six. Catalog copy of the general education program can be found at the end of this section.

There are goals to be met for each category and subcategory. In order to carry a general education designator, the goals of a course must match those of a category or subcategory. In addition, only courses of two or more credits can carry the designator and each course can carry only one. Almost all courses in the Catalog satisfy general education categories.

The General Education Subcommittee. This ad hoc subcommittee of the Curriculum Committee reviewed the general education assessment programs of several colleges and universities, and recommended a course-embedded program for UMM. Although the subcommittee discussed learning outcomes for the general education categories, in actual practice those are left to course instructors. This point is taken up again after the next paragraph.

Approving courses for general education. Disciplines recommend a designator for each of their courses carrying two or more credits. There are three levels of review to assure that course and general education goals coincide, with the discipline recommending to the division, the division to the Curriculum Committee, and the Curriculum Committee to the Campus Assembly.

\(^1\) The Division of Education is comprised of Education, Elementary Education, and Secondary Education. Disciplines in the Division of Humanities are Art History, Studio Art, English, French, German, Music, Philosophy, Spanish, Speech Communication, and Theatre Arts. In the Division of Science and Mathematics are Biology, Chemistry, Computer Science, Geology, Mathematics, Physics, and Statistics. The Division of Social Sciences consists of Anthropology, Economics, History, Management, Political Science, Psychology, and Sociology.
Assessing and improving student learning in general education. The bulk of this report is devoted to assessing and improving student learning in the disciplines. However, general education is based in discipline courses, so assessment in general education occurs course-by-course. As a consequence, overall improvement of student learning in general education occurs by the accumulation of increments.

Do the learning outcomes of individual courses meet the broad goals of the general education program? In other words, is a course-embedded assessment program in which instructors set the learning outcomes an adequate mechanism for achieving the goals of general education? On the one hand, assigning of general education designators through a three-tiered review process is a rigorous way of matching course and general education goals. But on the other, does it really work? What do the discipline reports themselves reveal? Are in fact general education goals honored in the actual teaching of the courses? The author of this report believes that there is strong evidence that the course-embedded program works, but before turning if only briefly to that evidence, the following should be noted.

Some disciplines chose not to report on course-embedded assessment, which is the only assessment directly relevant to general education. Examples are Political Science and Psychology, whose assessment reports focused on their capstone courses. And in a few instances disciplines have discussed assessment methods while not including a statement of goals. Now let us return to the evidence.

Consider the first course in the report, Physical Anthropology, which carries the Sci-L designator, science with lab. Compare the general education and course goals:

General Education: Physical and Biological Sciences. To increase students’ understanding of the structure and dynamics of the physical and biological worlds, and of the scientific method.

Physical Anthropology: The course seeks to develop student understanding in three broad areas: i. the biological basis of human life through the study of genetic inheritance, human adaptation, and variation; ii. the study of living non-human primates and their social behavior; and iii. the principles of evolution as well as the evolutionary history of fossil anthropoids, hominoids, and ancestral humans.

Evidently the course goals are concrete instances of the broad goal of increasing “students’ understanding of the structure and dynamics of the...biological world.” The instructor thoroughly measured the learning objective outcomes and thus the outcomes of the general education category. On the basis of the reports one can cite similar instances of concrete course goals realizing broad general education goals in disciplines such as Art History, Chemistry, College Writing, all of the Foreign Language disciplines, Economics, Management, Mathematics, Philosophy, Physics, Sociology, Statistics, Studio Art, and Theatre Arts.

General Education Survey for Graduating Seniors. This survey, administered annually, asks graduating seniors to self-assess the degree to which they have achieved general education goals and to rate whether or not they hold the goals to be important. Although this survey does not provide a direct measure of student learning, a sense of student views is important in guiding program review and development.

Seniors consistently rate their achievement higher than the importance of a general education category. This apparent discounting of the relevance of liberal learning to
their lives is an ongoing source of concern that is being addressed by two campus units, the Curriculum Committee and the Retention Group. Specifically they are considering how the curriculum can better incorporate the purposes and benefits of a liberal education.

The general education categories that seniors esteem of lowest importance are, consistently, Foreign Languages, Fine Arts, and Artistic Performance, although recently Mathematical/Symbolic Reasoning also attained a low ranking. Of highest importance to them are College Writing, the Social Sciences category (human behavior, social processes, and institutions), recently joined by the Human Diversity category. They also give themselves high achievement marks in these three categories that they rate as most important. There is a strong correlation of achievement/importance with the student’s division, and thus of the home of the student’s passion for learning.

The General Education Program

General Education Requirements (60 credits)

Provision i UMM courses designated as appropriate for meeting general education requirements are those which, if passed successfully, demonstrate the student’s competency in a given skill or area. Students are required to complete a minimum of 60 credits of general education coursework outside the discipline of the major and must meet the requirements listed below. The requirements may be met not only through UMM courses, but also by transfer of credit, examinations for proficiency or credit, assessment of prior learning, individual projects, and other means. For details, students should consult with their advisers. In some instances the specific general education requirements may be met using fewer than 60 UMM credits. If this occurs, then introductory or advanced elective courses from any discipline outside the major—with the exception of courses in elementary or secondary education, wellness and sport science, or accounting courses in management—may be used to fulfill the remaining credits of the 60-credit general education requirement. Note: The designation following each category below, e.g., FYS for First-Year Seminar, appears at the beginning of the parenthetical information for each course that is appropriate for that category.

I. The First-Year Seminar (FYS)***—One 2-credit course.

II. Skills for the Liberal Arts—One to five courses.*

These requirements emphasize the development of the intellectual skills, the communication skills, and the framework for learning needed for successful advanced work. Because new students need this foundation early, they are expected to complete many of these requirements during their first and second years.

A. College Writing (CW)—One course.*

B. Foreign Language (FL)—Two courses in a single language.**
C. **Mathematical/Symbolic Reasoning (M/SR)**—One course. *

D. **Artistic Performance (ArtP)**—One course.

**III. Expanding Perspectives**—Eight courses of at least 2 credits each.

A. **Historical Perspectives (Hist)**—One course.

B. **Human Behavior, Social Processes, and Institutions (SS)**—One course.

C. **Communication, Language, Literature, and Philosophy (Hum)**—One course.

D. **Fine Arts (FA)**—One course.

E. **Physical and Biological Sciences (Sci—without lab; Sci-L—with lab)**—Two courses, at least one with lab.

F. **The Global Village**—Two courses, one from each of two areas.

1. **Human Diversity (HDiv)**

2. **People and the Environment (Envt)**

3. **International Perspective (IP)****

4. **Ethical and Civic Responsibility (E/CR)**

* This requirement may be fulfilled through exemption.

** Students are required to demonstrate proficiency in a second language at the level achieved at the completion of the first year of college language study. Students can demonstrate proficiency by: a) passing 1002—Beginning Language II or an equivalent college course; b) passing the appropriate placement test; c) passing an examination for credit, such as AP or CLEP; or d) proving that they have a native language other than English. Students who plan to complete courses in the same language that they studied in high school must take the placement examination and abide by the placement recommendation. If, after an initial exposure to the recommended course, the placement seems inappropriate, they may follow the recommendation of their language instructor as to the proper entry course.

*** Students who do not successfully complete FYS should contact the Scholastic Committee Office (320-589-6011) for information on completing the requirement.

**** International students should contact the Scholastic Committee Office for an exemption.
Provisions ii through iv

Provision ii—Goals will be used to match courses to general education requirements (see below).

Provision iii—Only courses of two or more credits will satisfy an Expanding Perspectives requirement.

Provision iv—A course can satisfy only one of the general education categories.

Each major can provide students with a statement about how a student majoring in that area will formally acquire computing and writing skills. Students should contact their faculty adviser for current information.

Goals of the General Education Requirements

I. First-Year Seminar: First-year seminar aims not only to teach students to think critically and to assess sources of information, but also to help students to become aware of the lenses through which they perceive and to recognize that their perceptions are not universal.

II. A. College Writing: To understand the writing process through invention, organization, drafting, revising, and editing; and develop writers who can write about a range of ideas for a variety of readers.

II. B. Foreign Language: To develop some fluency in the skills of speaking, listening, reading, and writing in a second language; and critical insight into another culture.

II. C. Mathematical/Symbolic Reasoning: To strengthen students’ ability to formulate abstractions, construct proofs, and utilize symbols in formal systems.

II. D. Artistic Performance: To introduce an understanding of the creative process through individual performance, and demonstrate skill in such activities as composition, theater, dance, studio art, and music.

III. A. Historical Perspectives: To increase students’ understanding of the past, the complexity of human affairs, the ways in which various forces—economic, cultural, religious, political, scientific—influence efforts to control events, and the ways historians verify and interpret their findings.

III. B. Human Behavior, Social Processes, and Institutions: To increase students’ systematic understanding of themselves as functioning humans, their individual similarities to and differences from others, their awareness of the nature and significance of their conscious experience, and the forces that shape their interpersonal attachments and interactions; or to increase students’ understanding of methods of analyzing modern society or some
significant legal, political, economic, religious, social, or scientific component of it.

III. C. Communication, Language, Literature, and Philosophy: To expand students’ capacity to understand, analyze, discuss, and evaluate discourse concerning the complexity of the human condition through the study of languages and works of thought and imagination.

III. D. Fine Arts: To develop students’ understanding, analysis, and appreciation of the arts.

III. E. Physical and Biological Sciences: To increase students’ understanding of the structure and dynamics of the physical and biological worlds, and of the scientific method.

III. F. The Global Village: To increase students’ understanding of the growing interdependence among nations, peoples, and the natural world.

   III. F. 1. Human Diversity: To increase students’ understanding of individual and group differences (e.g., race, gender, class) and their knowledge of the traditions and values of various groups in the United States.

   III. F. 2. People and the Environment: To increase students’ understanding of the interrelatedness of human society and the natural world.

   III. F. 3. International Perspective: To increase students’ systematic understanding of national cultures substantially different from those in which they received their prior schooling.

   III. F. 4. Ethical and Civic Responsibility: To broaden and develop students’ capacity to question and reflect upon their own and society’s values and critical responsibilities, and to understand forces, such as technology, that cause them to modify these views and often mandate creation of new ways to resolve legal, social, and scientific issues.
### Discipline Report

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Anthropology

Course Assessment & Results—Physical Anthropology (ANTH 2101)

Physical Anthropology is a major subfield of Anthropology. The goals of the Unit Mission & Goals of the Anthropology major at UMM address the Institutional Mission in regard to 1) providing a liberal arts education, 2) education of our students to appraise values, and 3) meeting the General Education Requirements of the institution. In response to these goals, Physical Anthropology: 1) introduces students to the perspective of biocultural evolution, i.e., offers a holistic vision of humans in both their sociocultural and biological dimensions; 2) enriches the student experience through valuation of alternative theories on the nature of being human in accordance with the human diversity (HDiv) general education requirement; and 3) provides laboratory experience in scientific investigation of human origins, meeting the science lab general education requirement (Sci-L).

More specifically, it enhances the three goals of the Anthropology discipline: 1) to acquaint students with the concerns, theories, and methods of the discipline through comparative understanding of the range of human societies in both humanistic and scientific terms; 2) to enhance student competency in applying anthropology as a science; and 3) to provide students with competency in a major subfield of anthropology that addresses human biological variation, human evolution, and the human capacity to create culture.

Course Objectives:

Physical anthropology is the study of human biology within the framework of evolution. This science lab course has three broad objectives for developing student understanding: 1) the biological basis of human life through the study of genetic inheritance, human adaptation, and variation; 2) the study of living non-human primates and their social behavior; 3) the principles of evolution as well as the evolutionary history of fossil anthropoids, hominoids, and ancestral humans. Each of these areas requires development of critical thinking skills for analysis of the data, methods, theories, and debates surrounding human and non-human primates through evolutionary history that students are required to master. Students gain skills in data gathering, experimentation, testing, and drawing conclusions in lab sessions that reinforce the learning process in the classroom.

1. The issue of race is a core concept not only for physical anthropology, but the discipline as a whole, and sensitivity toward human variation is fostered by the UMM campus. Under the objective of understanding human adaptation and variation, students are introduced to the concept of “race” through historical development of the concept and its contemporary misuses. Before introducing the topic, a pre-test taps students’ understandings of “race.” Fourteen of 28 students believed that there were two or more “races.” Fall semester, 2006, after covering the unit, 25 out of 28 students in the class correctly answered all 5 questions that probe for significant understandings: that race is not a valid biological concept, that there is no relationship between race and intelligence, application of Mendelian genetics to inheritance of traits, and that traits often perceived as “racial” are a result of natural selection and adaptation. Twenty-six students correctly answered 4 of the 5 questions, 27 correctly answered 3 of the 5 questions, and 24 correctly answered 2 questions. A post-test demonstrated that only 5 of the 28 students continued to view race as a biologically valid concept; 14 had developed a more informed understanding and rejected their previous belief in multiple races.

To improve student learning in regard to race, students plotted precise cranio-facial measurements, based on Giles and Elliottts’ osteological materials, on a graph. The lab experiment demonstrated that
morpohological differences can not be segregated into distinct races. This experiment reinforced the genetic evidence provided in lecture that race is not a biologically valid concept.

2. As members of the primate order, physical anthropologists derive theories about non-human primate behavior that may have shaped the behavior of early hominid ancestors. Under the objective of understanding living primate behavior, students are introduced to ethology and the appreciation of non-human primates as social animals. After completing the unit on non-human primates, 25 out of 28 students were able to identify and briefly describe three significant facets of primate behavior and 100% of students correctly answer questions regarding learned behavior, dominance hierarchies, and capabilities such as deception, cooperation, tool use, and language learning. Assessment of their written responses revealed an enhance appreciation for the nuances of primate social behavior.

Efforts to improve student learning were made prior to administration of this assessment exercise. In labs, students were trained in ethnology, the careful, scientific observation of primate behavior. They were required to take field notes as they observed each focal animal illustrated in a video. Students then engaged in discussing possible interpretations, followed by the ethnologist’s explanation in the video.

3. Under objective three, students learn archaeological methods (understanding geology, environment, dating techniques, etc.), critically examine to problems with interpretation of hominid sites, and are introduced to the evidence and debates surrounding the evolution of human ancestors. Early in fall semester 2006, after being presented with theories and evidence for taphonomy (site formation processes), students were asked to identify three issues related to interpretation of early hominid sites with which they were unfamiliar before. Twenty-three out of 28 students were able to do so. Their responses were not of high quality, as would be expected since the pre-test was administered before covering the material in lecture. Students were ask to respond to two questions on phylogeny and one question on taphonomy (site formation processes) as part of the pre-test. Sixteen students correctly recognized the greater importance of phylogeny over classification in establishing evolutionary relationships; 12 were unable to do so. Twenty students recognized synapomorphies, or shared, derived traits, as the most relevant for establishing evolutionary relationships; 8 failed to do so. Finally, 17 students understood the relevance of taphonomy for interpretation of presumed associations between fossil bones and artifacts; 11 students failed to do so. During lecture, power point presentations will be used to improve student learning about these important concepts.

Evaluations of the assessment criteria under #1-3 above were newly implemented fall, 2006. They will be ongoing in an effort to evaluate what students are learning, how well they are learning it, and their ability to synthesize material and apply it to hypothetical and real situations.

This course was first taught fall, 2005. Over the past five years, the instructor has implemented a number of changes, based on student performance in the course.

1. To improve student learning in Physical Anthropology (ANTH 2101), the instructor implemented a number of strategies over the past few years. The course now utilizes technologies to enhance the laboratory experience, through use of interactive media that allow students to perform simulations, test hypotheses, collect data, analyze data, and develop their understandings based on methods and theories that undergird the programs.

- Virtual Laboratories in Physical Anthropology provides interactive lab experiments through which students manipulate data and draw conclusions, based on their observations
  The program offers tools for the study of genetics, primate behavior, and rotatable fossil skulls for students to hone their scientific and comparative observations
  The program provides theoretical and methodological background which students then put into practice
This media allows students to explore geographic distributions via maps, chronological time lines, and alternative phylogenies

- Investigating Olduvai provides a wide array of materials on the environment, geology, flora and fauna, artifactual, and fossil evidence at an early hominid site in East Africa. Students investigate all the available data, collect data and analyze them through graphs, and draw conclusions based on alternative (and contested) theories on early hominid behavior. Based on this program, I recently implemented a required final lab report that requires students to synthesize a vast amount of material and organize it into comprehensible form, using both the theory and methods of paleoanthropology. These reports are the basis for determining the concepts, methods and theories mastered by the student during the courses.

2. To enhance students’ laboratory experience, numerous osteological materials (articulated and disarticulated human skeletons and fossil casts have been purchased by the instructor to give students hands-on experience in comparative observations.

3. To aid student learning, the instructor over the past two years has transformed traditional lecture material into Power Point presentations. These provide more systematic presentation of the material and allow more adequate visual representation of primates and fossil remains.

4. Given the voluminous amount of material covered in the course, the instructor places exam study guides on the Physical Anthropology web site to focus student attention on the most important information. Students respond very favorably and report that the study guide contributes to their success in the class.

5. Learning also takes place outside of the classroom and to enhance student interest, numerous web links are available on the Physical Anthropology web site to allow students to further explore topics of interest.

6. Many students are challenged by exams. To aid students, a web page was developed and made available on the Physical Anthropology web page to suggest ways to improve study skills. This page offers a valuable tool for “learning how to learn.”

7. The instructor continues to seek new media and methods to improve student learning.

Art History

ARTH 1121
Spring 2007

The learning objectives are

1) to become familiar with important works of art

2) to develop the ability to analyze the formal properties of works of art

3) to develop an understanding of the relation of art to its social context.

EXAM #1

Learning objective #1
Questions 1 – 6 identification of works of art

Six slides will be shown for identification. Number your answers 1 through 6. Each slide will be shown for 45 seconds. Slide identifications must include the following:

- the name(s) of the artist(s) if known;
- the name of the work of art;
- the style-period of the work;
- for architecture, the name of the specific city where the structure stands or stood;
- for specified frescoes, the chapel in which the painting is located;
- the date of the work.

Each part of an identification is worth one point. Total: 4 1/2 minutes, 25 points

Percentage score for class as a whole: 86.9

Comments: This is fairly high for the first exam. The students took the exercise seriously.

**Learning objective #2**

   Explain how Giotto constructed the composition of this painting to enhance its narrative. 3 minutes, 5 points

Percentage score for class as a whole: 82.9

Comments:

**Learning objective #3**

21. Describe two broad cultural implications of Renaissance perspective as they apply to science, history, or individual experience. 5 points

Percentage score for class as a whole: 59.3

Comments: It appears that many of the students confused this question with other material I had reviewed with them. This is the first time I have asked this question on an exam. Next time I will be aware of the potential confusion.

**EXAM #2**

**Learning objective #1**
Questions 1 – 6 identification of works of art

Six slides will be shown for identification. Number your answers 1 through 6. Each slide will be shown for 45 seconds. Slide identifications must include the following:

- the name(s) of the artist(s) if known;
- the name of the work of art;
- the style-period of the work;
- for architecture, the name of the specific city where the structure stands or stood;
- for specified frescoes, the chapel in which the painting is located;
- the date of the work.

Each part of an identification is worth one point. Total: 4 1/2 minutes, 24 points

Percentage score for class as a whole: 96.6

Comments: I’m surprised to see improvement. This is unusual, especially for a second exam on which I usually see a slump.

Learning objective #2


Name two characteristics of this painting that mark it as a Mannerist work. 1 1/2 minutes, 4 points

Percentage score for class as a whole: 85

Comments: A slight improvement

Learning objective #3

18. It is said that Mannerism was a turbulent painting for a turbulent time. Explain this idea. 5 points

Percentage score for class as a whole: 86

Comments: There wasn’t the confusion on this question that there was on the question for exam #1. The students’ performance was consistent with their overall performance.

EXAM #3

Learning objective #1

Questions 1 – 6 identification of works of art
Six slides will be shown for identification. Number your answers 1 through 6. Each slide will be shown for 45 seconds.

Slide identifications must include the following:
- the name(s) of the artist(s) if known;
- the name of the work of art;
- the style-period of the work;
- for architecture, the name of the specific city where the structure stands or stood;
- for specified frescoes, the chapel in which the painting is located;
- the date of the work.

Each part of an identification is worth one point. Total: 4 1/2 minutes, 26 points

Percentage score for class as a whole: 91.3

Comments: A slight drop, probably due to fatigue near the end of the semester.

Learning objective #2

11. How is the garden facade of Versailles typical of Baroque architecture? How is it not typical? 3 minutes, 4 points

Percentage score for class as a whole: 71.2

Comments: I taught this question carefully, and emphasized that there were two parts to the answer, but many students wrote only one part of the answer on the exam. Their attention flags sometimes.

Learning objective #3

16. Explain one of the cultural perceptions that shaped Rubens’s depictions of North Africans in scenes such as his lion hunt or tiger hunt. 4 points

Percentage score for class as a whole: 91.2

Comments: I was surprised and pleased at how well they did on this question. In the past, a number of students in these classes tended to be resistant to issues regarding Western stereotypes on nonWesterners or similar issues. I pleased to see that there wasn’t such resistance in this class.

EXAM #4

Learning objective #1

Questions 1 – 6 identification of works of art

Six slides will be shown for identification. Number your answers 1 through 6. Each slide will be shown for 45 seconds.

Slide identifications must include the following:
the name(s) of the artist(s) if known;
the name of the work of art;
the style-period of the work;
for architecture, the name of the specific city where the
structure stands or stood;
for specified frescoes, the chapel in which the painting is located;
the date of the work.

Each part of an identification is worth one point. Total: 4 1/2 minutes, 24 points

Percentage score for class as a whole: 93

Comments:

Learning objective #2

12. You will be shown three paintings, each for 45 seconds. Designate the paintings as (a), (b), and (c). For each one, name the artist. 2 points each, 6 points total

Percentage score for class as a whole: 90

Comments: The paintings were ones that the students had not seen before. We discussed the styles of four landscape painters at length, analyzing their formal aspects. The students had a similar question on exam #3 and had not done as well as I would have liked, so I gave them the exercise again with different painters. We practiced more than the first time. They did much better after that. It was important to me that they have a successful experience with this kind of unknown ID, because it can be intimidating. Success with it builds a good deal of confidence.

Learning objective #3

16. Explain two ideas that raised the status of landscape painting in Europe in the early 19th century. 4 points

Percentage score for class as a whole: 77

Comments: They scored less well on this question than they might have. Generally they gave correct information but missed points for not being precise or thorough enough. These are constant shortcomings that I try to get students to overcome all the time, sometimes with greater success than other times.

Summation

Objective #1

to become familiar with important works of art

Exam #1: 86.9%    Exam #2: 96.6%    Exam #3: 91.3%    Exam #4: 93%
Objective #2

to develop the ability to analyze the formal properties of works of art

Exam #1: 82.9%  Exam #2: 85%  Exam #3: 71.2%  Exam #4: 90%

Objective #3

to develop an understanding of the relation of art to its social context

Exam #1: 59.3%  Exam #2: 86%  Exam #3: 91.2%  Exam #4: 77%

This was the best 1000 level class I have ever taught. The class was at 8 a.m., which is a time when I usually have poor attendance. These students not only came, but they paid attention. Their ups and downs on the questions for which I collected data, only demonstrate the incredible complexity of teaching a rich and varied set of ideas to 40 plus people at once. As always, I think about what they seemed to have understood and what they didn’t and how to explain things next time in ways that will make the ideas accessible and head off common misunderstandings.

Assessment
ARTH 1101
Principles of Art

The learning objectives are

1) to become familiar with important works of art

2) to develop the ability to analyze the formal properties of works of art

3) to develop an understanding of the relation of art to its social context.

To test learning objective #1, students were asked to identify a work of art (author, title, date).

<table>
<thead>
<tr>
<th>Exam</th>
<th>Exam 1</th>
<th>Exam 2</th>
<th>Exam 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>0.45</td>
<td>2.27</td>
<td>2.35</td>
</tr>
<tr>
<td>Control</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

The results improved dramatically from the first prelim to the second prelim as can be seen in the table above. This is most likely due to an increasing focus on stressing these data in the classroom as well as the implementation of a study guide for the second prelim, thereby enabling the students to reach higher learning outcomes. The continued use of these techniques led to a smaller, yet still significant, increase in the average score on the selected question on the final exam. **NB:** It should be noted that the identification of works of art is not a focus of this course as it is in the other two 1000-level courses offered by our discipline.
To test learning objective #2, students were asked to identify and/or comment upon the formal properties of a work of art, including process.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Exam 1</th>
<th>Exam 2</th>
<th>Exam 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>3.7</td>
<td>3.57</td>
<td>4.67</td>
</tr>
<tr>
<td>Control</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

The results decreased slightly from the first to second prelim, which may be a factor of the questions chosen to test this learning outcome. The question on the first prelim was not as difficult as that on the second prelim. There was a great improvement on the final exam in this learning outcome. This could be due to the fact that students studied longer and harder for the final exam than they did for the other exams. It could also be a factor of continued study of this type of information in class, which then came together for the students in the form of enhanced learning outcomes and concrete/applicable knowledge.

To test learning objective #3, students were asked to write essay answers (10 minutes max per question) discussing the relationship of a specific work or pair of works of art to a particular social or historical context as well as to one another.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Exam 1</th>
<th>Exam 2</th>
<th>Exam 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>5.84</td>
<td>8.72</td>
<td>7.55</td>
</tr>
<tr>
<td>Control</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

There was a significant increase in the score from the first to second prelim, which I believe indicates repeated focus, study, and work with this learning objective in class (both lecture and discussion activities). Frankly, judging by the answers to the chosen question on the final exam, the decline in mean score on the final exam is most likely due to students missing more classes once the weather got nicer and the school year edged towards its end. Those who did poorly on this question had clearly missed the relevant classes and had not bothered to do the relevant reading.

Biology

Jim -

At our meeting yesterday, the biology discipline discussed the assessment document you prepared for us.

First of all, thank you.
Second, there is one inaccuracy. Section 2.3.1 should reflect that FunGenEvoDevo has a decreased writing component compared to Principles. The change from one to two courses of BioComm is to compensate for this change.

Third, we'd like to add three items to strengthen the document:

1. Over the past several years, we noticed our students struggling with the molecular biology in the primary literature upon which they base their BioComm and Senior Seminar projects. We believe this is because, under our previous curriculum, Molecular Biology was taken by juniors and often seniors. So, in our rearrangement of the curriculum for the current catalog, we moved the Molecular Biology core course to the spring of the sophomore year, directly following Cell Biology - Chris will be reconfiguring the course somewhat to be appropriate for sophomores. In this way, students will have the foundational knowledge of Molecular Biology they need to succeed in our upper level electives and written and oral communication courses.

2. Our capstone course, Senior Sem, has seen some changes over the years. The grading was changed from S/N to A-F to give students better feedback (and of course to have them take it more seriously). In addition, we have instigated a schedule that students must follow with their advisor. Finally, many of us have become MUCH more hands on with our students to give them the best chance to succeed. We qualitatively assess that senior seminars are improved.

3. The FunGenEvoDevo course will now be our students’ first introduction to the UMM biology curriculum. We have introduced this course in order to establish a firm evolutionary framework for our students upon which to hang their subsequent biological knowledge. In addition, the course will be more "introductory" than Principles and hopefully help our students all reach the next biology course at a more similar level.

-Timna
Dr. Timna J. O. Wyckoff
Assistant Professor of Biology

Hey Jim,

Timna asked me to send this awhile ago- sorry for the delay.

I give pre- and post- tests in my biology core classes (Biol 2101: Evolution of Biodiversity and Biol 3131: Ecology). It has taken me awhile to settle on a test format that I find useful and informative (I am still tweaking). The results are as follows (with explanation):

Ecology

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre</th>
<th>Post</th>
<th>Improvement</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>59%</td>
<td>73%</td>
<td>14%</td>
<td>GRE Questions</td>
</tr>
<tr>
<td>2004</td>
<td>55%</td>
<td>75%</td>
<td>20%</td>
<td>GRE Questions</td>
</tr>
<tr>
<td>2006</td>
<td>50%</td>
<td>71%</td>
<td>21%</td>
<td>Textbook Test Bank</td>
</tr>
</tbody>
</table>

Evolution of Biodiversity

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre</th>
<th>Post</th>
<th>Improvement</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>28%</td>
<td>58%</td>
<td>30%</td>
<td>Textbook Test Bank</td>
</tr>
</tbody>
</table>

I began by giving ecology questions from a copy of the biology GRE exam. I found that approach wanting for a couple of reasons. First, the ecology questions seem a bit too easy
(witness the high pre-test scores—most people who take the GRE exam are assumed to be going into pr-health stuff). Second, the questions are a bit esoteric, and it is hard to map the results to particular units of my class. I certainly did not find myself “teaching to the test.”

Beginning in 2005, I switched to questions selected from the multiple choice test banks that come with every text nowadays. Since I am famous for not sticking too close to my textbooks (I give lots of supplementary readings), the relevance of some of the questions to my actual class can still be questioned, but the fit is better. In 2005, it appeared that I had solved the “pre-test is too easy problem,” but students knew half the questions on my 2006 ecology pre-test (or could at least pick the right answer out of a line-up—not the same as knowing). As I prepare for the next iteration of both classes, however, I now have data on how well students seemed to grasp a series of particular concepts. That is an improvement over the GRE-based test.

I am a bit embarrassed by how little “value-added” my students seem to be getting based on these limited metrics. Again in my defense, I am not teaching to the test (and I don’t use the multiple guess format in any other context). My students are learning lots, trust me!

Let me know what else you need.

-Pete

Bio 3121 End-of-Course Feedback & Evaluation

Insights and opinions from students have been helpful in the development of this course, and I hope that I can use your thoughts in the future design of the course. Your comments, in greater detail and more specificity than is possible on the Student Opinion of Teaching survey, will be useful for planning—and hopefully improving—this course in the future.

1. Lecture: What do you think about having more problem sets that students would work on outside of class and then present their answers in class? Is spending time in class to work on problems in groups a waste of time? Useful? From your experience with other classes, etc., what suggestions do you have for the 100-minute classes?

2. Tests: would you like to have had more? Fewer? Different format (e.g. essay questions)? Lab tests? Take-home tests? Graded problem sets?

3. Lab reports: useful learning exercise? Useful for drawing together the different steps of the two lab series? Would doing one lab report be enough, or was writing a second lab report useful as a learning exercise?

4a. The third lab series was set up as more-or-less independent projects. Would you have preferred step-by-step exercises as in the first two series? Did you find the experience of having to plan and conduct your own work valuable? What preparation, experience, information, or materials would have made the experience more useful for you? What kind(s) of preparation earlier in the term would have helped you with this project?

4b. Posters: Useful? Would it have been better to have a third lab report?

5. To display PCR project posters along with the Chem ITR posters, we had to finish lab projects before the last week of class. To do this I dropped a lab using the Kinemage software, and assigned this as independent work. Would you prefer to have the Kinemage as a lab
session? If so, would you be willing to give up a week of working on the PCR project to make that possible?

6a. Text: One of the main reasons for choosing Weaver's text is his emphasis on actual experiments-- their design, results, and interpretation. In general, do you find this useful for understanding molecular biology? Were Weaver's presentations of experiments useful?

6b. The organization (especially the sequence of topics) of the book is different than what we followed in class. How comfortable were you with this? How important to you is it that a class and a text follow the same sequence of topics?

6c. What did you like best and least about the text?

6d. Bottom line: Would you recommend continuing to use this text?

7. Are there topics in Molecular Biology that you would have liked to cover, that we neglected entirely? That you would like to cover in more depth? In less depth?

8. Bio 2111 Cell Biology is a pre-requisite for the course. In the last couple years, labs for that course have been modified so that they include an introduction to genetic engineering. This has some overlap with the first series of Molecular Biology labs (genetic engineering of prokaryotes). Is this redundant? If we dropped the first series from Mol. Bio., would you be ready to start directly with the second series?

9. Three pieces of advice to a friend taking this course next year would be:

10. Three pieces of advice to me for next year would be:

Chemistry

Assessment in Analytical, General, Organic & Physical Chemistry

Assessment of Lecture-Laboratory Connections in Introductory General Chemistry
Ted M. Pappenfus, Assistant Professor of Chemistry
November 30, 2006

General Chemistry I and II at the University of Minnesota, Morris (UMM) are introductory chemistry courses with corequisite labs. Each course meets the general education requirement of a science course with lab (Sci-L). The two courses together are designed to prepare a student for a major in science, including chemistry and biology. This course introduces the basic skills and concepts needed for further study of chemistry. Students learn to reason and describe the physical world as chemists do. A major task is to attain proficiency in problem solving and laboratory skills for the application of chemical concepts. The course also delves into the description of matter on the subatomic, atomic, and molecular levels paying attention to how this relates to trends in the properties of substances.

Chemistry faculty at UMM have made great efforts to better correlate lecture and laboratory material in general chemistry courses. When lab and lecture components are taught independently without concurrent concepts, student learning becomes less efficient and
frustrating for both the student and instructor. To gauge the effectiveness of our efforts to make connections between lab and lecture in our general chemistry courses, we have utilized carefully designed lecture exam questions to assess student understanding of laboratory experiences. This assessment was conducted in the fall of 2006. Enrollment for the lecture course was approximately 80 students. The number of these students that were included in the study for each exam varied. Four lab-lecture examples are outlined in this summary.

**Example one.** The first experiment of the semester includes an introduction of several common laboratory techniques. Included in the lab are concepts of density and significant figures. These concepts are also covered extensively in lecture. In this experiment, students construct a micropycnometer (a device used to measure the density of a liquid) and use density calculations to determine its volume. Assessment of this laboratory experience was conducted by including the following exam question in the first lecture exam:

_Britney Spears decides to give up her music career and becomes a chemistry major at UMM. After preparing her micropycnometer in her first general chemistry lab, she decides to determine its volume with ethyl alcohol (d = 0.7901 g/mL). Britney collects the following data in her notebook:

*Mass of empty micropycnometer = 5.493 g
*Mass of micropycnometer and ethyl alcohol = 6.392 g

What is the volume of Britney’s micropycnometer?_

\[
a. \quad 0.899 \text{ mL} \\
b. \quad 1.14 \text{ mL} \\
c. \quad 1.138 \text{ mL} \\
d. \quad 0.710 \text{ mL} \\
e. \quad 0.7103 \text{ mL}
\]

The question mimics the lab experience with the exception that an alternative liquid with a unique density is used to calculate the volume of the micropycnometer.

The results of student responses to this question are given below:

<table>
<thead>
<tr>
<th>Item Analysis: Question20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Label</strong></td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>Total Missing</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

The correct answer to the question is B. As indicated above, only one-third of the class answered correctly. If significant figures are ignored, both B and C become acceptable answers. As a result, it appears that 91% of the students understood the concept of density, but only a third of the students fully understood the rules for significant figures.
How can this data be used to improve student learning? This data is not completely surprising as rules for significant figures are challenging for students. To improve student understanding of these rules, laboratory reports throughout the remaining semester were graded on the proper application of these rules. Although no concrete data has been compiled, student performance on significant figures has improved this semester.

Example two. The fourth experiment of the semester includes the synthesis and analysis of aspirin. The underlying concepts included in this experiment are limiting reagents and percent yield. Both concepts were discussed at length in lecture. Assessment of this laboratory experience was conducted by including the following exam question in the second lecture exam:

Aspirin is produced by the reaction of salicylic acid and acetic anhydride.

\[ C_7H_6O_3(s) + C_4H_6O_3(\lambda) \rightarrow C_9H_8O_4(s) + C_2H_4O_2(\lambda) \]

If you mix 5.00 grams of each reactant, how many grams of aspirin can theoretically be obtained?

- a. 2.83 g
- b. 3.83 g
- c. 6.52 g
- d. 8.82 g
- e. 10.0 g

The question accurately reflects the laboratory experience with the exception that different amounts of reagents were used in the actual lab experience. The results of student responses to this question are given below:

**Item Analysis: Question18**

<table>
<thead>
<tr>
<th>Label</th>
<th>Value</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>1</td>
<td>1.43</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>6</td>
<td>8.57</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
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</tr>
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</tr>
<tr>
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<td>70</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The correct answer to the question is C. It appears the vast majority of students understood the concepts of limiting reagents and percent yield. These are recurring concepts throughout the course and student understanding likely improves.

Example three. The sixth experiment in the course includes quantitative analysis of household vinegar with the use of analytical titrations. Concepts included in this experiment are acid-base chemistry and solution stoichiometry. These concepts are discussed at length in lecture. Assessment of this laboratory experience was conducted by including the following exam question in the third lecture exam:

A 25.00 mL sample of NaOH is titrated with 17.13 mL of 0.3150 M HCl. What is the concentration of the NaOH solution?
a. 0.001360 M  
b. 0.1233 M  
c. 0.2158 M  
d. 0.4597 M  
e. 0.7356 M

The question is very similar to the lab experience except a different acid standard was used in the actual lab to determine the NaOH concentration. The results of student responses to this question are given below:

**Item Analysis: Question10**

<table>
<thead>
<tr>
<th>Label</th>
<th>Value</th>
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<td>B</td>
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<tr>
<td>Total</td>
<td>71</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>

The correct answer to the question is C. This data suggests students understood the concepts of solution stoichiometry and acid-base chemistry.

**Example four.** The ninth experiment of the semester introduces students to spectroscopy. Included in this experiment is the determination of energies and intensities of the transitions present in hydrogen line emission spectra. Students experimentally measure the energies and then calculate the values based on the Bohr model of the hydrogen atom. This treatment of the atom is also discussed at length in lecture. Assessment of this laboratory experience was conducted by including the following exam question in the fourth lecture exam:

For a hydrogen atom, calculate the wavelength of the line in the Lyman series that results from the transition \( n = 4 \) to \( n = 1 \).

- a. 30.4 nm  
- b. 97.2 nm  
- c. 114 nm  
- d. 121 nm  
- e. 182 nm

This question is very similar to the lab experience with the exception that a different series (Balmer series) was analyzed in the actual lab. The results of student responses to this question are given below:
The correct answer to the question is B. Students had much difficulty with these calculations in the actual lab, so the exam data is encouraging and suggests that the lab experience facilitated student learning.

Summary: The data presented in this report suggest that positive connections are being made between the lab and lecture components of our introductory chemistry course. The efforts of our faculty to better correlate lab and lecture material have promoted student learning in this course. Deficiencies in our methods have been measured and addressed to improve the efficiency of student learning.

Assessment -- Chem 3101 Analytical Chemistry -- Fall 2006

Learning Objectives:

1. Understanding multiple ways to represent concentrations of solutions. Understanding how to convert between units.

2. Understanding dilution and density.

3. Understanding propagation of uncertainty.

4. Understanding pH and pOH and the mathematical relationship between the two.

5. Use of correct significant figures.

The following question was given as a problem on Exam One. A problem similar to part A had been assigned as a suggested book problem (Quantitative Chemical Analysis, 7th ed by Daniel C. Harris, Chap 1 Number 33). The answer to part C does not depend on answers to part A and B. Parts B and C are similar to questions on graded problem sets.

2. (15 points) A. What is the density of a 23.46 ± 0.05 wt % aqueous KOH solution? Diluting 22.72 ± 0.02 mL of the solution to 1.000 ± 0.003 L gives a concentration of 0.1345 ± 0.0003 M?

B. What is the uncertainty in the density?

C. What is the pH and pOH of the 1.000 L solution (assume 25°C)?

<table>
<thead>
<tr>
<th>Label</th>
<th>Value</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
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</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>
From the table we can see that the average score on the question was a mere 50% (passing is 60%) and over one third of the class scored less than 33%. These concepts are important ones in chemistry and are cumulative which means they continue to show up throughout the course.

**Feedback:** Student exams were returned to them with corrections and comments for this problem. In class a brief summary of answers was given and students were encouraged to review their exam and set up appointments with questions. Approximately eight students met with me regarding this particular question. They were again referred to the book problem for additional practice. Unit conversion, significant figures, pH, pOH, and dilution continued to be taught in other applications both in lecture and lab throughout the remainder of the semester.

**Retesting:** The same question was asked on the cumulative final exam but instead of being worth 15 points it was worth nine.

From the table we can see that the average did improve by 6% but is still not passing. The number of students scoring less than 33% dropped from one third to one quarter. The number of students scoring in the top 33% improved from 28 to 42%. It is also the case that this problem was graded ‘tougher’ on the final since it was a repeated question and at a lower point value there was less opportunity for partial credit. Thus the improvement was perhaps even more than the numbers suggest.

### Physical Chemistry Assessment Project
Jim Togeas, Fall 2006

**Overview.** The Second Law of thermodynamics is arguably the most sweeping law in physical theory. We devote the middle six weeks of fall semester to it, and much of what precedes it is simply a prelude to the Second Law. Since my emphasis is on applications, I will assess my physical chemistry students’ ability to apply the Second Law to chemical problems and attempt to use the assessment results to improve their understanding.

**Two learning objectives.**
#1. The student should be able to apply the Second Law to phase changes.
#2. The student should be able to apply the Second Law to chemical changes.
Assessment tool. The assessment tool is comprised of examination questions in which the student must carry out a multi-step calculation using corollaries of the Second Law. Here is a sample problem:

4) a) Find a numerical value for the equilibrium constant at 298 K for the following reaction:

\[ \text{AZ}_2(s) + \text{A}(g) = 2\text{AZ}(g) \]

Use the data in the thermochemical table.

b) Solid \( \text{AZ}_2 \) and gaseous \( \text{A} \) are introduced into a flask. At equilibrium some solid remains. Find the mole fractions of \( \text{A} \) and \( \text{AZ} \) at equilibrium if \( T = 298 \text{ K} \) and \( p = 30.0 \text{ bar} \).

A three-step assessment. Step 1) Initial assessment by means of an exam. I will go through the exams to see where students had difficulties. Step 2) Improving student learning. I will describe those difficulties to the class and, as always, invite them to my office to discuss learning issues one-on-one. I will put problems from the exam that proved difficult on a problem set and ask the students to work and submit them for evaluation. Step 3) Final assessment. The final exam will have problems of the same type and I will ascertain whether or not students avoided previous difficulties.

Initial assessment. There were four problems, two on phase changes and two on chemical changes. Sixteen students took the exam. Having evaluated the exams and then reviewed them, I recognized two principal difficulties encountered by students.

Difficulty #1. Students failed to recognize the scope, that is, the range of validity of a Second Law corollary. This had to do with the two questions on phase changes. Since there were two problems and sixteen people working them, there were thirty-two opportunities to make this error. I saw nine errors\(^1\) of this type for a frequency rate of \((9/32) \times 100 = 28 \%\).

Difficulty #2. Students failed to sufficiently correlate the mathematical analysis with the phase or chemical change. Since there were four problems and sixteen people working them, there were sixty-four opportunities to make this error. I saw fifteen errors\(^2\) of this type for a frequency rate of \((15/64) \times 100 = 23 \%\).

Are these weaknesses cause for alarm? No, the errors were predictable—beginners’ mistakes. I warned the students that these were pitfalls that they would encounter, and when they get their exams back they’ll chide themselves for their “folly.” They shouldn’t. These kinds of Second Law analyses are complex. There are many parts to the analysis and it’s not surprising that details escape the attention of some students, especially in an exam format.

Improving student learning. I put the four exam questions to be reworked and submitted for evaluation on two different problem sets. On the day that I returned the exams, I pointed out these weaknesses.

Final assessment. On the final, there was one problem on phase equilibrium, where students encountered difficulty number one, and a total of two problems where they encountered difficulty number two.

Difficulty #1. The problem was optional, but twelve of sixteen students attempted it. Three of them committed the same blunder as before, giving a frequency rate of \((3/12) \times 100 = 25 \%\).

---

\(^1\) Eight people used the Clausius-Clapeyron equation in a phase equilibrium problem in which there was no vapor present.

\(^2\) The specific error again is frequent with beginners. Students fail to use the chemical equation to guide their calculation of standard enthalpy and free energy changes from tables of standard enthalpies and free energies of formation.
hardly different from the above. It’s a smaller sample, but of course I can’t claim that learning improved.

**Difficulty #2.** There were a total of twenty one opportunities to make this error, but nobody did, so here the frequency rate fell to 0 %. I observed improved student learning.

**Something for the future.** One thing that I don’t really know is if students review their old exams to determine where they went wrong. My reaction to the first difficulty was that here were people who didn’t learn from past mistakes. Does nobody learn from past errors? I don’t believe that. Some of the people in the class are of the type that don’t tolerate loose ends in anything that they do. Still, it appears that a few lack focus.

**Assessment Information from Nancy Carpenter**  
**Organic Chemistry at UMM**

At the end of academic years 2001-2, 2002-3, and 2006-7 Nancy administered the American Chemical Society standardized examination in organic chemistry. Her students performed about two-to-five percentage points above the national test mean.

<table>
<thead>
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<th>UMM Test Mean</th>
<th>UMM National Percentile</th>
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<td>48</td>
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<td>43.1</td>
<td>45</td>
<td>55</td>
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</table>

**Computer Science**

**Computer Science Assessment Report – 2007**

**Goals**  
The goals for students in the computer science discipline are to:

1. Learn the fundamentals of computing including problem solving skills, algorithm development, programming and developing effective solutions through group activities,
2. Acquire appropriate communication skills for the field, and
3. Develop a broader perspective of the computing field.

**Scope of assessment activities**  
In computer science, our major assessment efforts have been directed at the capstone experience and one of the three courses that we consider “core” to the major – CSci 3601: Software Design and Development. In addition to these efforts, we have implemented some level of course-embedded assessment in CSCi 1302 and CSci 1201 by tracking student progress on particular learning goals that we have mapped to specific quiz and test questions (similar to a pre- and post-testing approach since it takes samples over time).
Outside the classroom, our students are often involved in research (MAP, UROP, and directed studies), internships (throughout the year, not always for credit), or other computing activities (programming contests, fieldtrips, etc.). These activities outside of class help many students explore a variety of aspects of the computing field.

**Direct measures of student learning**
For the capstone course (CSci 4901), the research paper and presentation are evaluated to determine whether the student passes or not.

In the courses with embedded assessment (CSci 1201 and CSci 1302), the assessment was part of the quiz, test, or “whaddayaknow” (like a quiz, but not for points – just an opportunity to see what students actually know and to give them feedback quickly).

One type of evaluation outside the classroom is student achievement in programming contests. Our students have been participating in the DigiKey programming contest for several years and taken many of the top places. This is a regional contest that our students participate in by invitation.

**Description**
A great deal of effort has gone into designing a curriculum with multiple venues for achieving each of the goals of our discipline, though some courses are especially crucial for students to achieve certain goals. For example, there are two specific courses (CSci 2901 – Seminar I and CSci 4901 – Seminar II) that are central to students achieving the second goal: Acquire appropriate communication skills for the field. The following section of this report details our assessment efforts and recent changes to these courses that focus on communication within the field of computer science.

**Computer Science Discipline Seminar Course Assessment:**
In the capstone assessment report from 2001-2002, the computer science discipline reported on changes that were being made to the capstone seminar course for our majors. Currently, students take one course for one credit during their sophomore year and complete another one credit course (the other half of the old version of the capstone course) as juniors or seniors.

In the first course (CSci 2901), students learn the fundamentals of reading, writing and presenting scientific literature. They focus on learning about ethical topics in computing. The second course (CSci 4901) allows the student to pursue a topic of his/her choosing. Students research a current topic in computer science by reading the latest research journals and similar publications. Working one-on-one with a faculty member, a student develops a written document and a professional presentation of this research.

Evaluations of the presentations in both courses use assessment tools developed previously (essentially an evaluation completed by all students and faculty attending the presentations). The second course (CSci 4901) includes a student conference with proceedings. The faculty meets at the end of this conference to discuss the papers and presentations and determine who will pass. Students are sometimes allowed to present again or work on a rewrite if they would otherwise not pass. The faculty member who advised the evaluated student collects the forms, looks at the feedback, and meets with the student to discuss the feedback on the presentation and paper.
CSci 4901 also helps students reach the third goal listed above: Develop a broader perspective of the computing field. Looking at a sample of 70 seminar papers from 1999 to 2007, topics range widely. About 12 on artificial intelligence (algorithms for AI, applied AI, AI in games, machine learning, and neural networks), 6 papers focus on algorithms, 5 are about computer architecture, 1 is about assistive technology, 2 are about bioinformatics, 1 is about computer forensics, 1 is about databases, 4 are about evolutionary computation and genetic algorithms, 3 are about graphics, 1 is about modeling, 10 are about networking, 1 is about parallel computing, 3 are about programming languages, 5 are about robotics, 3 are about security, 3 are about software engineering, 2 are about systems, and 2 are about theoretical topics in computer science. Some students’ paper topics correspond with courses taught as topics in our upper level electives, while others may have sparked interest in students to request a course after the paper is presented. The Seminar II class has been a nice way to inform students in the audience about possible topics courses they would like to see offered, so the students have a more informed voice each spring when we meet to discuss possible courses to offer as upper level electives.

Splitting the seminar course into two separate one-credit courses seems to be working better for our students than the older version of the capstone course. It allows them to split the work of the course and not need to retake the ethics portion if they fail at the presentation of research or writing the scholarly paper we expect of a junior or senior. It also allows our students to have some experience writing and presenting about topics in the field earlier (an important step towards the second goal of our discipline). In the 2006-2007 offerings of CSci 4901, students were asked (relatively informally) to rate the perceived value of the course related activities. In the spring offering, we eliminated an activity that students the previous semester found unhelpful and added a different activity. We will continue to ask students to rate their experience in the course in order to better meet their learning needs.

CSci 3601: Software Design and Development Course Assessment:
Software Design and Development is a core course in the computer science major that goes a long way toward helping students achieve the first goal of our discipline: Learn the fundamentals of computing including problem solving skills, algorithm development, programming and developing effective solutions through group activities. This course presents unique challenges in assessing student learning since it is mostly based on a major class project. Some of the changes in this course over time have included incorporating tools that allow the instructor to better assess a student’s contribution to the class project (bug tracking, code commits, software versioning, documentation, and testing tools). Since student learning in the course would seem to be connected to the amount they contribute to the project, the changing use of these tools over time is a story about assessing student learning in the course. Though the data collected by the tools is quantitative, the story about how the data is used to improve student learning is more qualitative.

(Jim, as I am writing this, I think that it might be good to ask Nic to write this section about 3601 in terms of “Interplay of direct measures of student learning, discipline goals, and improved student learning.” It just seems awkward the way it is... it talks about the evolution of the course, but not enough about how the changes related to student learning... or at least that is my fear.)

Description of embedded course assessment
In both courses where we used embedded assessment, we kept track of student progress on certain topics or learning objectives and modified upcoming course activities based on the outcomes. Both courses used quizzes, tests, and “whaddayaknows” to track student progress.

In CSci 1302, there were online quizzes with instant feedback to students and whadayaknows where feedback was given next period or at latest two periods later. The instructor modified later exams based on previous exams (repeating questions where there was a struggle in order to find out if course learning activities had an impact). The students did in fact improve on those key areas. *(Jim, if you need more on this, Nic says he can fish through and find some of this.)*

In CSci 1201, the instructor kept track of student progress (via quizzes, tests, and “whaddayaknows”) on several learning goals that the discipline has deemed important. One such goal was that students should develop an understanding of recursion. The instructor introduced recursion toward the end of the term in the fall semester offering (the first time the course was offered), so there is not much time for changes to occur or for the topic to really sink in (apparently). The results on all three learning goals related to recursion were better on the quiz than they were on the final exam. This led the instructor to introduce recursion earlier in the spring semester for the second offering of the course (and to revisit the topic a few times). In the second semester, the students had a more consistent and lasting understanding of recursion (based on their performance on the final exam where students earned an average of 12 points out of 14 points that related to recursion and only one student seemed to fail to grasp the concept in general (score of 7.5 out of 14)).

**General Education categories spanned by discipline courses**

M/SR (We offer one IS course (IS1091) that fills E/CR, but I’m not sure that counts here.)

*(Jim, if you need numbers for the embedded assessment of 1201, I can give you charts, but I need to put in pseudonyms, so if you don’t need it, things are easier. ☺ Let me know.)*

**Economics/Management**

**Economics 3113: Money, Banking, and Financial Markets**

**Objective 1:** Students should understand “leverage” as an essential bank feature, and “maturity transformation” as an essential bank process. They should understand how the combination of leverage and maturity mismatch (between assets and liabilities) poses fundamental interest rate risk to bank solvency. Students should understand why this is a social problem.

Criteria:

a) Students should be able to identify the common items found as assets and liabilities on a bank’s balance sheet, and be able to categorize each according to maturity.

b) Students should be able to calculate the present value of future cash flows at various interest rates, and thus to calculate the effect of an interest rate change on a bank’s net worth.

c) Students should be able to articulate the “public good” aspect of stable banks and money, and discuss the historical, legal, and institutional adaptations undertaken in pursuit of this stability.
Objective 2: Students should understand the problems involved in standardizing the value of money, domestically and internationally.

Criteria:

a) Students should understand how the gold standard functioned, and the problems caused by fluctuations in the value of gold.

b) Students should understand the bi-metallic standard and Gresham’s Law.

c) Students should be able to explain the causes and consequences of inflation and deflation, with particular reference to the destabilizing effects on banks.

Assessment Results for Economics 3113: Money, Banking, and Financial Markets
Fall, 2006 – Professor Arne Kildegaard

I asked my students a multi-part in-class essay question in late October, to address Learning Objective 1. The results were:

<table>
<thead>
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<th>Criterion A</th>
<th>Criterion B</th>
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<td>Good</td>
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<td>Fair</td>
<td>12%</td>
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<tr>
<td>Poor</td>
<td>12%</td>
<td>12%</td>
<td>40%</td>
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</table>

I asked them again in mid December, and the results were:

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<tr>
<td>Poor</td>
<td>12%</td>
<td>16%</td>
<td>12%</td>
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</table>

I asked my students a multi-part in-class essay question in late October to address Learning Objective 2. The results were:

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</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>0%</td>
<td>0%</td>
<td>16%</td>
</tr>
<tr>
<td>Fair</td>
<td>8%</td>
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<td>12%</td>
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<tr>
<td>Poor</td>
<td>92%</td>
<td>96%</td>
<td>72%</td>
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I asked them again in mid December, and the results were:

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<th>Criterion A</th>
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<td>Fair</td>
<td>12%</td>
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</tr>
<tr>
<td>Poor</td>
<td>10%</td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Learning objectives of Financial Management course:
Students should:
1. Understand the principles of asset pricing and be able to price financial assets, such as stock and bond.
2. Be able to analyze and evaluate investment projects.
3. Understand the trade-off between risk and return and be able to estimate a fair return.

To assess these learning objectives, after each class, I distribute exercise/homework assignment to find out how much students have learnt from the lecture. Depending on the result of the assignment, I adjust my teaching accordingly. If it indicates that students have understood the concept, I move on to the new topic. Otherwise, I repeat the concept in the next class to make sure that students have grasped the main idea. In addition, I use three tests to evaluate the student learning. The results are as follows:

Objective 1: The first 5 weeks of the course

<table>
<thead>
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<th>Good</th>
<th>Fair</th>
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<tbody>
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<td>Assignments</td>
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Objective 2: The next 5 weeks of the course

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<th>Fair</th>
<th>Poor</th>
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Objective 3: The last 5 weeks of the course

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<th>Poor</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>47.37%</td>
<td>42.11%</td>
<td>5.26%</td>
<td>5.26%</td>
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<tr>
<td>Test 3</td>
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Education

Report of Assessment Results 2006-2007: Education

The goals for Elementary and Secondary Education, as stated in the unit assessment plan, are designed to help students (future teachers) to

- acquire the knowledge, skills, and dispositions necessary to being a competent teacher;
- understand central concepts, tools of inquiry, and structures of disciplines taught in schools;
- understand children and adolescents and their individual and group behavior;
plan and implement instruction adapted to learners of diverse backgrounds and abilities;

communicate effectively;

encourage critical thinking and problem solving;

use formal and informal methods of assessment;

collaborate with parents/guardians, families, school colleagues, and the community in an ethical manner.

These goals are based on the ten Standards of Effective Practice set forth by the state of Minnesota.

Part One: Program Summary Data

Results pertaining to the goals listed above are obtained through a variety of assessments including both internal and external measures of goal achievement. The assessments included in this report are the following: scores on the PRAXIS II Exams of content and pedagogy, summative evaluation scores for the final student teaching experience, and scores on key assignments in ElEd/SeEd 4901: The Teacher and Professional Development. Assessment results of these measures are presented in Table One.

1. PRAXIS II Exams

PRAXIS II exams of content knowledge and pedagogical knowledge are required by the state and form one data point of external review. All teacher education students in the 2007 graduating cohort took the required exams. Every student passed the Pedagogy, Learning and Teaching (PLT) exam surpassing the required scores by 25.55 points (elementary) and 19.69 (secondary) points. As shown in Table Two, all teacher education graduates have passed the PLT since 2002. The UMM 100% pass rate exceeds the state's 98% pass rate.

2007 UMM teacher education graduates also surpassed the minimum cutoff scores for their various content areas by an average of 27.9 points (elementary) and 18.52 points (secondary). Every student in this group passed required content examinations allowing them to apply for state licensure. As shown in Table Two, the UMM pass rates for PRAXIS content exams generally exceed state rates. Because of low numbers of students taking some exams, one student with a failing score can have a large negative effect on the pass rate. For example, only two students have taken the earth science PRAXIS exam and since one of them failed it, our pass rate is only 50%.

The PRAXIS exams are high stakes for our students because they cannot be licensed to teach in Minnesota without earning a passing score. The teacher education faculty members discuss, analyze, and use the PRAXIS results. For example, we had concerns about the number of our students who were unable to pass the Spanish Productive Language test required for K-12 Spanish licensure (See Table Two). Though our 64% pass rate was higher than the 61% state rate, we wanted to understand the problem and work to improve student performance. A UMM Spanish professor and the instructor of the world language methods course attended a state meeting. They gave feedback to the state about possible problems with the test and were able to determine instructional adjustments in their courses to assist the students. In the 2007 cohort, 100% (5 out of 5) of students taking the Spanish test were successful in their attempt.

This set of data revealed to us that UMM teacher candidates do well on state measures and that they are well prepared for this part of the licensure process. We continue our work in assisting students who may be unfairly affected by this standardized test. In our entering elementary cohort (class of 2009), we have two students who speak English as their second language. Their ability to understand pedagogy, understand content, and use their understanding in successful instruction may not be adequately assessed by the PRAXIS exams.

2. Summative Evaluations of Student Teaching

Elementary and secondary education students complete eleven weeks of student teaching as their final field experience. During that field experience, they apply the knowledge and skills studied in the programs. In this
experience, all ten Standards of Effective Practice are implemented and assessed. Cooperating teachers and university supervisors complete at least three formative evaluations that highlight strengths in performance and assist the student in identifying weaknesses. Goals are established, additional coaching is provided, and students are given the opportunity to address areas of concern. The summative evaluation assesses all of the program goals and is completed by cooperating teachers and university supervisors. Data from final field experience evaluations for the 2006-2007 cohort reveal that all but one student met minimum proficiency for licensure (please see Table One). No other student received less than an “average” rating on any part of their field experience evaluation. In fact, most earned high marks from cooperating teachers or university supervisors.

In analyzing the data, the teacher education faculty noticed that university supervisors’ ratings for the experience are slightly higher on average than those of the cooperating teacher. The difference may not be statistically significant, but research in the field typically describes the opposite case, with cooperating teachers assigning higher ratings. We will analyze the specific cases to understand the results.

3. Key Assignments from EIEd/SeEd 4901: The Teacher and Professional Development

Along with student teaching, 4901 is a capstone experience. It is a course that is collaboratively designed and is taught by all faculty in the Elementary Education and Secondary Education disciplines. In this shared course, elementary education majors and secondary education certification students are mixed together in course groups. The goals of the course are to facilitate professional reflection, to enable students to explore professional issues related to teaching, and to assist students in evaluating the effects of their professional choices and actions on students, parents, other professionals, and the larger learning community. Assessments in this course are designed not only to assess what the student has learned during the course, but also to reflect students’ professional growth since they began the program.

The primary assessment of student learning in “The Teacher and Professional Development” is the professional portfolio created by students. Students begin creating this portfolio when they enter the program and continually revise it throughout. The portfolio has ten sections, one section for each of Minnesota’s Standards of Effective Practice—standards in which students must demonstrate competency before being licensed as teachers. For each standard, students write an essay that describes their growth and development in the standard, provides evidence of that growth and sets new goals for deeper understanding. This process again exemplifies the formative assessment built into the teacher education program. Students have multiple opportunities to write, reflect on feedback, and reconstruct their portfolio throughout the program. In this course, the students write their final statements. Each faculty member is responsible for evaluating 10-12 professional portfolios. Prior to the evaluation period, faculty members engage in a reliability session to ensure fair and reliable grading practices across faculty members. In this session, faculty read and grade sample essays and discuss the reasons for their grades and discuss any discrepancies. The process continues with multiple readings and discussions until the faculty are grading in a manner consistent with one another.

Assessments also include a senior presentation. To prepare for the presentation, students write an education philosophy paper which is read by their professor who then gives feedback. The presentation is evaluated on the basis of the student’s professionalism, understanding of various aspects of their content area and of pedagogy, responses to questions, and communication skills. Due to the large number of students (approximately 80 per year), not all faculty attend and evaluate each session. Student attendees also help to informally evaluate the sessions.

Table One reports student scores on the portfolio and senior presentation assignments. Previous data (See, for example, 2003 assessment report) indicated that the portfolio scores were slightly below scores on other course assignments. In reviewing assessment data, faculty members suspected that the writing required by the portfolio assignment might not fit with some students’ preferred style or modality of learning; the faculty might grade the portfolio more rigorously than other assignments since it is the linchpin of the course; or, the assignment is more extensive, lasting two weeks in duration and it is difficult for students to maintain the same level of excellence throughout. In response to the data and other concerns, the faculty decided to make changes in the course scheduling. Some students may now choose to begin the course one week earlier to allow extra time to complete assignments. Others follow the traditional schedule. Students complete the same assignments for both options of the course. Additional instruction and support is given for the writing of the standards, and students have responded positively. In the 2007 data, the slight gap in grades between the portfolio assessment and other course assignments is less noticeable.
assessment remains. As in most courses, some assignments are more difficult than others, and the portfolio is such an assignment.

Part Two: Sample Course Assessment

All courses in the elementary and secondary education programs are crafted around the ten Standards of Effective Practice. Lectures, readings, and assignments are linked to specific standards and the links are usually recorded on the syllabus. The courses also are based on mastery learning. This means that students must perform all tasks at a proficient level. If a student does not successfully master a task, he or she continues to work on this task and repeat an assignment until it is mastered. Formative assessment is also embedded into most courses. An example from EIEd 3101 Teaching and Learning Strategies is included in Appendix A. The instructional and assessment process for this EIEd 3101 assignment exemplifies the process found for other assignments in teacher education courses. The instructions are given orally and in writing. Several class sessions are devoted to instruction and guided practice. Students receive the scoring rubric in advance and thus understand the grading criteria. Students meet individually or in small groups with the instructor. Sections of the assignment are due at different times and the students receive feedback. If the student does not meet required standards, he or she must meet with the instructor and correct deficiencies. Because the teacher education courses are linked to performance in the field, the students must also teach the lessons to their practicum students. They complete a self assessment prior to submitting the unit for a final grade.

Part Three: Students Who Fail to Meet Requirements

Some students in the 2007 graduation cohort who struggled self-selected out of the program at various points in the process. Additionally, formal and informal data on course performance did indicate that a few particular students struggled to meet minimum standards of proficiency throughout the program. This year, one student failed to pass student teaching despite ongoing assessment and instruction. The faculty is discussing ways to support student development so that all can succeed in student teaching and then in their own classroom. We also are looking for ways to identify earlier in student teaching whether or not a student is having serious difficulty.

Though we always have concerns about students who have marginal or failing performance, the data clearly show that most of the students far surpass the minimum requirements set by our own program and those of the state and national accreditation agencies.
### Table One: Summary Data for 2007 Education Graduates

<table>
<thead>
<tr>
<th></th>
<th>Principles of Learning and Teaching</th>
<th>Content</th>
<th>Cooperating Teacher</th>
<th>University Supervisor</th>
<th>Final Portfolio Score (Scores range from 1 unsatisfactory to 3 exemplary)</th>
<th>Senior Presentation (100 possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elementary Education Students N=29</strong></td>
<td>184.28 (25.55)</td>
<td>172.90 (27.90)</td>
<td>26.04</td>
<td>26.5</td>
<td>2.48</td>
<td>96.14</td>
</tr>
<tr>
<td><strong>Secondary Education Students N=25</strong></td>
<td>176.69 (19.69)</td>
<td>167.80 (18.52)</td>
<td>22.65</td>
<td>24.29</td>
<td>2.38</td>
<td>93.68</td>
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</table>

### Table Two: Pass Rates for Praxis II 2002 to 2007

<table>
<thead>
<tr>
<th>Test/Licuensure Area</th>
<th>State Pass Rates</th>
<th>UMM Pass Rates</th>
<th>Total number taking test</th>
<th>Number pass</th>
<th>Number fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Arts</td>
<td>94%</td>
<td>100%</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Communication Arts and Literature</td>
<td>97%</td>
<td>100%</td>
<td>20</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Elementary Education Content</td>
<td>97%</td>
<td>98%</td>
<td>158</td>
<td>155</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>95%</td>
<td>91%</td>
<td>21</td>
<td>19</td>
<td>2</td>
</tr>
<tr>
<td>Music</td>
<td>98%</td>
<td>97%</td>
<td>38</td>
<td>37</td>
<td>1</td>
</tr>
<tr>
<td>Productive Language: French</td>
<td>96%</td>
<td>100%</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Productive Language: Spanish</td>
<td>61%</td>
<td>64%</td>
<td>11</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Social Studies</td>
<td>95%</td>
<td>97%</td>
<td>38</td>
<td>37</td>
<td>1</td>
</tr>
<tr>
<td>Middle Level Communication Arts and Literature</td>
<td>79%</td>
<td>100%</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Middle Level Mathematics</td>
<td>91%</td>
<td>100%</td>
<td>17</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Middle Level Science</td>
<td>83%</td>
<td>100%</td>
<td>9</td>
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</tr>
<tr>
<td>Middle Level Social Studies</td>
<td>69%</td>
<td>92%</td>
<td>12</td>
<td>11</td>
<td>1</td>
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<tr>
<td>Science: Biology</td>
<td>89%</td>
<td>100%</td>
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<tr>
<td>Science: Chemistry</td>
<td>85%</td>
<td>100%</td>
<td>2</td>
<td>2</td>
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</tr>
<tr>
<td>Science: Earth</td>
<td>94%</td>
<td>50%</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Science: Physics</td>
<td>85%</td>
<td>100%</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>PLT: Elementary</td>
<td>98%</td>
<td>100%</td>
<td>156</td>
<td>156</td>
<td>0</td>
</tr>
<tr>
<td>PLT: Secondary</td>
<td>98%</td>
<td>100%</td>
<td>135</td>
<td>135</td>
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</tr>
</tbody>
</table>
Appendix 1: EIEd 3101 Teaching and Learning Strategies Mini-Unit Assignment, Process, and Assessment

Part A: Assignment  Plan and teach a three-lesson mini unit based on a literature selection or other topic chosen in consultation with your cooperating teacher. Due dates are: 9/22 (topic) 9/25 (front matter) 9/27 (block plan) 10/6 (completed plan) 10/27 (amended, taught, analyzed, & resubmitted)

1. Unit Title
2. Intended Grade Level

3. Unit Goals and Rationale
Choose 3 to 6 goals for the unit. Have at least one goal in each of the following categories: content, process, and attitude. List and label the goals. For goals, you may use words like “learn” or “appreciate.” The more specific words are required for objectives. Here is an example:

The students will work toward the following goals in the mini-unit:
Content
• Learn about the Underground Railroad and its importance in the history of our country.
• Understand the concepts of slavery, freedom, and migration.
Process
• Improve the communication skills of listening, reading, writing, and speaking.
• Engage in higher level thinking skills.
Attitude
• Show understanding and respect for people of different races.

For the rationale, describe the importance of the unit to the education of your students. In a few sentences, explain what the students will learn and why they should learn it. Don’t just say, “it’s important”—tell WHY it’s important. Be sure to link your unit to Minnesota academic standards.

4. Background  Research your topic. In an essay (approximately 500 words), describe important and relevant concepts and skills. Background knowledge should be at a higher level than what the students will learn.

5. Preassessment
Describe how you assessed background knowledge and skills prior to planning the unit. Explain what you did a) to learn what students already know, b) to organize and keep records for all students, and c) to use preassessment information to make sure that all students will succeed.

6. Block Plan
Complete the block plan template to provide an overview of the unit. In the methods section, list the key steps of the selected strategy and describe what you will do. The description should be brief, but specific to the lesson.

7. Detailed Lesson Plans
Develop three detailed lesson plans to meet the goals of the unit. Write at least one lesson plan using each of the following strategies: a. Learning Cycle, b. UMM Direct Instruction Lesson, and c. Concept Formation OR Concept Attainment. At least one of the lessons must be adapted for cooperative learning.

Carefully follow the formats provided for each type of lesson. Organize the lessons in a logical sequence. The direct instruction lesson must not be the first lesson in the unit. Create lesson plans with clear link between objectives, instruction, and assessment. Remember that assessment methods must allow you to observe and measure learning for each individual student.
8. **Analysis of Student Learning**
   a. Summarize student learning (and your own) on the lesson plan form after you teach each lesson.
   b. Include *individual* pre- and post-assessment data for *each* lesson. Display the data using Excel. Be sure to use pseudonyms or numbers in place of student names.
   c. Analyze the aggregated data. How well did the class do as a whole? How did you change your instruction based on the needs of the group? What would you do if you were to continue to teach the class?
   d. Analyze the individual data. What did you do for the individual students based on their performance on your assessments? What would you do if you were to continue to teach each of the students?

9. **Final Analysis**
   After teaching the unit, analyze it as a whole. What went well? What would you do differently? How would you characterize student learning and engagement in the unit? What did you learn? How did the unit help your progress toward licensure standards?

**Appendix 1, cont.**

**Part B Evaluation  EElEd 3101**

<table>
<thead>
<tr>
<th>Mostly</th>
<th>Fully</th>
<th>No</th>
<th>Somewhat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit Goals</strong></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Are correctly identified as content, process, and attitude,</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Are appropriate for the topic, and</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Are appropriate for the students.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Rationale</strong></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Describes importance of unit to the education of the students. Links the unit goals to state standards.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Background</strong></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Describes important and relevant concepts and skills. Knowledge represents <em>higher</em> level concepts.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Preassessment</strong></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Describes how background knowledge was assessed,</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Explains how you will use the data to provide better instruction so that all students learn,</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Explains how you will adapt lessons for individual differences in</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>• Ability</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>• Knowledge</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>• Learning style</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Explains how you will record and track assessment data.</td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Block Plan</strong></td>
<td></td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Includes accurate and sufficient information</td>
<td></td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>
Lesson Sequence includes:
- At least 3 lessons
- Clear, logical sequence (DI can not come first)
- Superior understanding of concepts and processes
- Appropriate choice of instructional strategy
- Appropriate objectives
- Complete list of materials
- Lesson source
- Instructional technology

<table>
<thead>
<tr>
<th>Detailed Lesson Plans</th>
<th>2</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are appropriately written and include careful attention to learning objectives and effective assessment. Include: a. Learning cycle, b. Direct instruction, and c. Concept attainment or concept formation. Include one lesson adapted for cooperative lesson.</td>
<td>9</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
</table>

Unit is free of typographical errors or errors in spelling, mechanics, and usage

<table>
<thead>
<tr>
<th>Unit</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>

Analysis of Student Learning (Completed after teaching unit)

Analyze and records student and self-assessment results for each lesson (as part of plans), displays individual pre- and post-assessment data for all objectives using Excel spreadsheet. Analyzes individual data and includes answers to all assignment questions. Describes aggregated data and answers all assignment questions. Is free of typographical errors or errors in spelling, mechanics, and usage

<table>
<thead>
<tr>
<th>Analysis of Student Learning</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>

Final Analysis (Completed after teaching unit)

Thoughtfully analyzes unit as a whole, answers all questions for assignment (Strengths, weaknesses, learning), summarizes how students learned because of your unit, and explains how the unit helped progress toward licensure standards. Is free of typographical errors or errors in spelling, mechanics, and usage

<table>
<thead>
<tr>
<th>Final Analysis</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>

Improvement on previously graded work is present and complete.

<table>
<thead>
<tr>
<th>Improvement</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>

Comments: Unit
Grade: _

Appendix 1, cont.

Part C: Instruction and Assessment Process for Mini-Unit

Step One: Instruction, practice, and feedback for elements of an instructional unit including objectives, academic standards, four instructional strategies, and assessment.

Step Two: Students complete sections of assignments and submit according to timeline. Sections are assessed and feedback is provided to students.

Step Three: Students individually with instructor to discuss problems, questions, and ideas for the assignment.

Step Four: Students submit the completed instructional unit.

Step Five: Instructor evaluates and grades final unit. Additional written feedback is included.
Step Six: If the instructional unit meets standards, students receive approval to teach the unit to elementary students in the practicum classroom. Minor problems may have been noted in feedback and student is expected to correct them before instruction. Students are encouraged to contact instructor with questions and frequently do so.

If the instructional unit does not meet standards, students meet with instructor for further discussion, explanation, and instruction. Students must submit a revised unit. Once the unit meets standards, students receive approval to teach the unit to elementary students in the practicum classroom.

Step Seven: Students teach the three lessons in their instructional unit. After teaching each lesson, students assess the performance of their own students according to their objectives. They also assess their own performance.

Step Eight: After completing the implementation of the full mini-unit, students complete the analysis of student learning and final analysis sections of the unit. The entire unit including original, revised, and new sections is submitted for evaluation.

Part D 2006 Gradebook Entries Related to Mini-Unit Assignment

<table>
<thead>
<tr>
<th>Student</th>
<th>Unit Topic/Draft of FM</th>
<th>Block Plan/Assessment</th>
<th>Unit Plan</th>
<th>Final Unit</th>
</tr>
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<td>✓-</td>
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<td>B-</td>
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<td>A-</td>
</tr>
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<td>R</td>
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Research Seminar Assessment (Engl 4000 courses; capstone for the major)

Goals
The English 4000-level Research Seminar is a capstone course that draws upon skills and knowledge developed throughout the undergraduate’s career as an English major. Such skills include critical analysis of literary works and related cultural formations, argumentative writing in clear and persuasive prose, and reasoned and articulate oral expression. These skills are assessed using the conventional tools of formal and informal essay assignments and classroom participation, though the latter is given more than usual scrutiny because enrollment is limited to twelve students, far fewer than in other English courses. The seminar is distinguished not only by its size and intellectual rigor, but also by its emphasis on bringing students into productive dialogue with the current state of the discipline beyond the undergraduate level. In addition to our previous objectives for students, the seminar adds both
(1) the development of sophisticated research skills and
(2) the ability to engage publicly with current debates in the field.

Assessment Tool
To achieve objective (1), students are exposed to the same research tools and techniques used by professional academics, and their developing skills are assessed not only by the quality of their final research project, but also by their ability to produce an annotated bibliography that reflects their capacity to find and evaluate relevant literary, historical, and critical source material. Since the essay produced for this class will include the first substantial field-specific research that many students will have done, one way to gauge their grasp of the work is to track the kinds (and, in the essays, the number) of sources they select.

Spring 2006:
- section 1
  Of the 9 annotated bibliographies, 4 showed substantially too little range of source material and too little acquaintance with the kinds of sources standard to research in the discipline. A minimum of 5 sources was required for the bibliography, though students were encouraged to work towards 10; all students stopped with just 5.

Fall 2006
- section 1
  All six of the students who completed the course were required to submit while engaging in their research an annotated bibliography of ten sources. Students met with the instructor in a special library session before undertaking the bibliography to learn how to recognize the kinds of sources valued by the profession, with the result that most of the sources on the annotated bibliographies were professionally creditable. The final paper was required to make use of just five sources. One student’s paper had just three, but all the others exceeded the requirement. The average number of sources cited in the final papers was between seven and eight.
Spring 2007

- section 1
Of the 11 annotated bibliographies, 4 were excellent; they had more than 5 sources, all creditable, professional sources, in many cases whole books in addition to articles, and their annotations showed that they had read them carefully and had thought about how the sources would contribute to their projects. Another 4 were good, sometimes with rather thin annotations or with insufficient evidence of how the students planned to use the sources, or with presentation problems. The remaining 3 were barely acceptable in terms of type of source and/or quality of annotation. These minimally fulfilled the requirements of the assignment but showed no mastery.

- section 2
10 students; information not available

Objective (2) is assessed by student participation in our public English Research Symposium, in which students are required to give 15- to 20-minute oral presentations formally explaining the interpretations they have derived from their research. The Symposium follows the typical model of conferences attended by English academics, so that students are placed on panels in which they must interact with each other and with the audience. All of these skills, both new and established, are focused in the development of an original and intellectually substantial research essay, about ten pages in length.

Assessment
2005-06:
In the essay for the class, after receiving written feedback and individual research sessions, 3 of the 4 poor bibliographies were improved to the point that the students’ essays included at least 3 professionally creditable sources. For the next year’s seminars, we decided to pay still more attention to teaching students how to find, evaluate, and use sources.
Participation in symposium for 05-06: 31 students, with strong attendance by faculty, other students, and parents. That part works well, and with the favorable responses we have received, plus the hard work the public presentation encourages students to do, we plan to continue this aspect of the seminar.
The research skills, however, need firmer preparation. In response to the struggles students had with finding appropriate sources, we have begun instituting an annotated bibliography assignment in many of the preparatory (3000-level) classes and devoted more time to source discussion in the seminar itself.

2006-07:
Fall: While this was a strong group of well researched papers, there were two areas that need further work: first, some students seemed to prefer to use sources that were available to them electronically through scholarly databases even when more relevant sources were to be had through interlibrary loan, suggesting that we need to impress upon
them the importance of the latter alternative; second, some students cite sources that they do not much use in the body of their paper, which suggests unnecessary padding of the bibliographies.

Spring: The really problematic bibliographies were given individual written and conference attention. Faculty collected and kept for future use examples of the best annotated bibliographies.

Participation in symposium for year: 28 students, with strong attendance by faculty, other students, and parents.

Assessment Response
We need to continue monitoring both participation in the seminar and satisfaction with it (students’ and ours). We plan to collect more detailed information about the where students are finding their sources—by searching library databases, following up footnotes in publications, or more randomly trolling the internet—in the hopes that we can better help them locate and assess the usefulness of particular articles.

English 1011, College Writing

Overview
College Writing fulfills a general education requirement for all UMM students; it is intended to prepare them for advanced writing in a variety of fields by introducing them to the conventions of academic discourse and encouraging them to make substantive revisions to drafts. In Spring 2002, the English discipline clarified our goals for the course; these goals align with the subsequent cross-disciplinary survey, undertaken in Spring 2003, of UMM faculty’s most pressing concerns about student writing.

In order to gauge whether or not the course is preparing students to write competently in their other courses, we focused on three critical features of college-level writing products and process: stating an argumentative thesis clearly at the beginning of a paper, analyzing (rather than merely summarizing) evidence for that thesis, and appropriately revising the paper’s content and/or form in response to peer and instructor feedback.

Learning Objectives
By the end of the course, students should be able to

• Understand and recognize the basic conventions of effective academic writing.
• Articulate a specific and argumentative thesis.
• Develop and organize an argument.
• Supply and analyze appropriate evidence in support of a claim.
• Understand citation norms and use an appropriate citation format.
• Paraphrase, summarize, and effectively quote sources.
• Locate sentence-level errors in their writing and find answers/help in a reference book.
• Understand writing as a process (planning, drafting, revising, editing).
• Make meaningful and substantive revisions to their own work.
• Offer constructive comments, both in writing and orally, on peers’ work.
Assessment Tool

Though the details of readings and assignments vary, all sections of College Writing require that students write multiple drafts of multiple papers and receive feedback on those drafts from each other and from the instructor. In this section of College Writing, assessment is based on students’ final portfolios, which allows comparisons of final versions with early drafts.

Step 1: first draft of first paper

In the first two weeks of class, students drafted a response to the first paper assignment. Instructor kept copies of comments for all students.

At the beginning of the semester, 1 of 18 students was able to write a specific, argumentative thesis and 2 showed mastery of analysis; 3 wrote competent thesis statements and 4 showed competence at analysis; 13 failed to produce an appropriate thesis and 11 wrote papers that essentially lacked analysis. Most students needed additional instruction and practice in these two areas; all students needed additional instruction and practice in at least one other area (such as organization). Revision skills could not yet be assessed.

Step 2: later draft of first paper

In the fourth week of class, after instructor feedback, peer workshops, and in-class discussions of conventions of academic discourse, including the examination of course readings as potential models, students handed in revised versions of their first papers.

At this point, 3 of 18 students were able to write a specific, argumentative thesis and 4 showed mastery of analysis; 8 wrote competent thesis statements and 5 showed competence at analysis; 7 failed to produce an appropriate thesis and 9 wrote papers that essentially lacked analysis, indicating that approximately half the students still needed further instruction and most still needed additional practice in these areas. Eight students had already successfully engaged in substantive revision; 7 had made useful but relatively minor changes; the remaining 3 had at least attempted to respond to feedback.

Step 3: final portfolio

At the end of the semester, after drafting and revising three more papers, students handed in final portfolios.

By the end of the semester, 5 of 18 students were able to write a specific, argumentative thesis and 6 showed mastery of analysis in at least one paper; all wrote competent thesis statements and showed competence at analysis in at least one paper, although 6 students also failed to demonstrate competence in thesis and/or analysis in at least one paper. Eight showed mastery of the revision process by making multiple substantive revisions to all papers; all had demonstrated competence by substantially revising at least one paper.

Initial Assessment

This assessment suggests that our current methods of instruction in these areas are generally successful, that students who struggle with the basic conventions of academic writing at the beginning of the semester are capable of handling them by the end of the course, and that some students who are already relatively well-prepared are able to
advance from competence to mastery. It also shows, however, that even with ample opportunities to revise, many students’ portfolios are uneven—some papers demonstrate competence and others do not—and that many others are achieving consistent minimal competence but not mastery.

**Improving Student Learning**

1. We need to work closely with individual students to ensure that success with a particular paper is a model for success on other papers rather than a fluke occurrence; to that end, we must track carefully students’ achievements as well as their shortcomings and to help them see the ways in which skills and strategies developed in one paper can transfer to other assignments.

2. We need to provide our students with better working models of academic discourse. The readings in this course were not particularly academic; they were fine examples of rhetorical strategies and stylistic sophistication, but they did not necessarily offer competent students examples of mastery, and they did not encourage students to think critically about what types of questions, problems, claims, and evidence count as legitimate and interesting in an academic context. Two of our faculty have been awarded a grant to develop a new syllabus for the class that will, we hope, result in more effective cross-disciplinary preparation for our students (and will allow us to collaborate with faculty from other disciplines to better assess that preparation).

**ENGL 1131, INTRODUCTION TO LITERATURE**
**Assessment 2006-07**

*Overview:*
This course was introduced in 2003 to address a substantial shortcoming in students’ preparation for upper-level English courses. It is now the gateway course for the English major and lays the foundation for advanced literary analysis. After a few years of minor revisions, we have in the last year re-examined whether or not the course provides the foundations students need for subsequent English classes. In order to gauge whether or not the course is providing students with the tools they need for advanced English courses, we first focused on one of the tasks students find most difficult: poetry analysis. If students at the end of 1131 still cannot demonstrate proficiency in this kind of analysis, we will use the assessment results to make changes in emphasis and/or approach in Engl 1131.

*Learning Objectives:*
1. to improve students’ ability to READ carefully and actively,

2. to improve students’ ability to understand and discuss literature analytically (to get them beyond what many say is the high school standard of a response rather than an analysis), using the conventional terminology, and

3. to improve students’ understanding of and ability to implement processes of making a critical argument, covering such things as (in no particular order):
   a. identifying pattern/variation,
b. discovering basis for comparison,
c. exploring and evaluating the implications of a and b and improving interpretation
(extensive comprehension what seems to be in a text or piece of text) and critical reading
(exploring the cultural and intellectual structures of a text).

Assessment Tool:
Annotation of a single poem (all students annotate the same poem), using and explaining
critical vocabulary and showing how well they have understood the poem, at the
beginning, middle, and end of the semester. This assessment process was begun in 2005-06.

Step 1: Students in the first week of class complete an annotation of a single poem.
Instructor keeps representative examples (best, middle, worst) and notes numbers in each
range.

Spring 2005: Nearly half the students could not meet minimum standards for critical
analysis of poetry on the first annotation. Most of that group tended toward discursive,
self-focused responses rather than demonstration of analytical skills. Even those students
who approached the poem analytically lacked the vocabulary to explain clearly and
precisely.

Spring 2007: Roughly the same distribution and problems again. So far, at least, it seems
that incoming students possess about the same degree of background in literary analysis.

Step 2: After several in-class discussions and practice annotations with written instructor
feedback, the instructor compares and evaluates the group as a whole’s ability to perform
the annotation task, on a similar poem, near midterm and again at the semester’s end.

Spring 2005: In the seventh week of the semester—and the focus so far has been
exclusively on poetry—the students showing mastery were 4 of 19; those showing
competence were 10 of 19, and the remaining 5 still needed additional instruction and
practice. By the semester’s end, all but 2 students had gained basic competence in
annotation.

Spring 2007: Just before midterm, the number of students showing mastery of annotation
had risen to 4 of 17; those showing competence but not mastery was 9 of 17. Only four
students still did not understand the terms and/or how to use them to discuss the poem.
At the semester’s end, all students had gained basic competence with poetry annotation
and could explain and utilize most of the critical terminology; 2 of 17 still struggled
significantly to do so.

Initial Assessment:
Spring 2005: More emphasis on process, on steps for doing annotation and on goals,
needed to be added to the course. It was, but probably too late in the term to be most
useful.
Second Assessment:
Spring 2007: While the numbers of students at midterm and at semester’s end were not that different from the numbers in 2005, students in this class more quickly were able to understand the goals and process of annotation with instruction that from the start focused on step-by-step process. The question to follow from this will be whether or not students maintain these skills once achieved in this class; in the next level (the survey classes), do students still possess and utilize this knowledge?

Improving Student Learning:
1. We need to continue comparing and discussing initial evaluations of students’ skills, since we have noticed in previous years changes in the focus and strength of preparation. As these change, we are likely to need to change where we begin in our introductory class.

2. Variations in the last few years among the Engl 1131 sections had shown up before 2005 in students’ level of preparation for upper-level courses. We have worked to standardize sections to greater extent and to make sure that English majors have enough time and practice to master basic analytical skills. The multiple instructors of the course approach the material in slightly different ways; regular discussions (in faculty meetings, every other week) of successful assignments and of students’ critical abilities with poetry annotation in particular means that we can and have compared approaches to see which works best. All sections of Engl 1131 now assess students’ ability to meet this learning goal and will continue to do so.

3. We plan to discuss giving students at the start of the survey classes a poem to annotate, to remind them of the skills they should have and to refresh their understanding of how to employ them. We want also to explore core criteria for each level of English class and construct a method of tracking students’ abilities in relation to those criteria.

French

Assessment Plan for the French Discipline and 2007 Results of Assessment

This measurement of student learning records students’ performance in terms of four basic skills typically measured in the acquisition of a second language: listening, reading, writing, and speaking. The Beginning /Intermediate stages of a student’s encounter with French will be assessed by comparing results on the Iowa Placement Test. The advanced phase of their encounter will be assessed using the American Council for the Teaching of Foreign Languages Proficiency Guidelines for Speaking and Writing.

ACTFL Proficiency Guidelines are national standards that have been developed for speaking and writing skills by specialists in second language acquisition, and can be found as .pdf files on the ACTFL web site: http://www.actfl.org (in the Publications menu).

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<th>Year I</th>
<th>Fren 1001-1002</th>
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The Iowa Placement Test (IPT) is administered to all students who have had previous experience with French who wish to enroll in French at UMM. The test establishes pre-existing knowledge of and competence in French and assesses reading, grammar, and listening comprehension skills. Students take the IPT a second time at the conclusion of Fren 1002 to ascertain individual proficiency at the end of the FL requirement.

### Year I

**Outcomes**

For 2007, the sample group is quite small because one colleague failed to re-administer the Placement Test at the end of 1002. The test was administered to 17 of 25 students enrolled at that level. The average score among those students responding was 26.35. The minimum score indicating preparedness for the next course in the language sequence (Fren 2001) is 27. Of 17 respondents, 8 scored a 27 or higher, while nine students scored below a 27. However, successful completion of French 1002 marks the completion of the foreign language requirement at UMM. That is, students are not required to demonstrate proficiency with an adequate score on the IPT. Only three students had an existing placement score on file at the University; scores for these students improved an average of 6.3 points over the previous test; all three of these students scored a 26 or better, placing them on the threshold of preparedness for the next level or beyond. These data reflect less improvement than those collected in 2005, when students gained an average of 7.89 points. However, the 2007 data set is based on only 3 preexisting scores; the other 14 had no previous experience with French. Of these 14, only 5 achieved a score that would place them in the next level. This suggests that the threshold may be set a bit high. However, since the second year of the program is an accelerated review of the first (and one of the cornerstones of FL pedagogy is “recycling,” or circling back around to review a concept in a more complex context), students have opportunities to master concepts that may be lost on them the first time.

### Year II

**Fren 2001-2002**

The IPT is administered again at the end of Fren 2002, and scores are compared to existing IPT scores for each student. The administration of the test at this stage is particularly appropriate because the second year emphasizes review and mastery of basic grammar concepts.

**Outcomes**

The IPT Test was administered to all nineteen students enrolled in the course. The average score on the test was 37, which is slightly above the average score on the 2005 assessment (36.56). The minimum IPT score that indicates a student’s preparedness for the next course in the language sequence is 37. Ten students scored a 37 or higher, while 9
scored below a 37. Thirteen of the 19 students tested had preexisting IPT scores on file; these students improved an average of 7.4 points over the previous test. Of the 6 students with no preexisting score on file, 3 scored above the threshold, while 3 scored below.

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<tr>
<th>Year III</th>
<th>Fren 3001-3011</th>
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<tr>
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<td>At the end of Fren 3011, an in-class writing sample will be collected and assessed according to ACTFL Proficiency Guidelines for Writing.</td>
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<th>Year III Outcomes</th>
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<td>None available, since my colleague teaching French 3011 (Matt Senior) failed to administer the assignment, despite several reminders in the last two weeks of class.</td>
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<tr>
<th>Year IV</th>
<th>Fren 4901</th>
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<td>Fren 4901, Senior Seminar, taken in the student’s final semester at UMM, includes intensive revision of a major writing assignment and a public presentation given in French. Students will complete another writing sample in French which will be assessed according to the ACTFL Proficiency Guidelines for Writing and compared to the writing sample collected at the end of Fren 3011. The oral presentation will be scored according to the ACTFL Proficiency Guidelines for Speaking. See enclosed .pdf files of ACTFL Writing and Speaking Guidelines.</td>
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<th>Year IV Outcomes</th>
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<td>Eight students were enrolled in Senior Seminar in the spring of 2007. One of them is a native speaker of French, so I have excluded him from assessment results. Of the seven remaining students, four spent a semester in Montpellier, and three had not yet studied abroad (note that two of these students will participate in July in Paris in 2007; one of them will stay in France as a teacher’s aid in a French high school for the 2007-08 AY). Writing Proficiency: (Note that these assessment levels refer to the students’ original paper, not the final product of the revision process). Based on the ACTFL Guidelines, one student achieved an Advanced-High level of writing proficiency, two achieved Advanced-Mid, and three achieved Advance-Low. One student achieved only Intermediate-High Writing Proficiency. Interestingly, one student who has not yet spent significant time in France achieved better proficiency than two who have; another student who had not spent any time abroad performed equally well. In sum, contrary to expectations, study abroad is not a reliable predictor of higher levels of proficiency in writing.</td>
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Oral Proficiency: Based on the ACTFL Guidelines, one student achieved Advanced-High Oral Proficiency, one student Advanced-Mid, and one student Advanced-Low. One student achieved Intermediate-High and three students achieved Intermediate-Mid. Here, the difference between those who have spent significant time in a Francophone country and those who have not is a bit clearer, although not as clear-cut as I had expected: one student who has never been to France achieved better oral proficiency than two who had.

**REFLECTIONS ON THE REPORT**

- Obviously, the data as presented here is unsatisfactory, not so much for the results themselves as for the unsystematic manner in which the data was collected. We will revise this assessment plan immediately to administer the test twice to each class, once in the fall and once in the spring, in both the 1xxx and 2xxx courses.
- It is disheartening to see that half of the students in both the 1xxx and 2xxx courses do not reach the threshold required to enroll in the next level, yet the majority of them do pass these courses. At this time, passing the course is sufficient evidence of preparedness for the next course. When a student struggles in a particular course, we recommend that they enroll in the July in Paris program, which includes 2.5 hours of daily instruction in French for four weeks and many cultural excursions in French. We have also allowed students to take courses out of sequence to double back and take a course.
- At this time, our assessment plan focuses exclusively on language proficiency and does not measure the acquisition of cultural knowledge, even while nearly all of the advanced courses in our current program have a cultural/civilization focus, and culture is a significant component of first and second year courses, as well. We will discuss whether and how to assess the acquisition of cultural knowledge in the fall.
- While the French Discipline has not been especially good about implementing an assessment plan, we have been very responsive to indications that our majors could be graduating with stronger skills in French. While up to now, explicit instruction of grammar ends with the end of 2002, we have devised four new courses that will weave explicit instruction of grammar through all four years of coursework. We will begin teaching these courses on a two-year rotation in the fall of 2007. The requirements for the major will not change, but we will replace some of the culture/civilization courses offered each year with Phonetics, a translation course, an advanced grammar course, and Business French. Each year, students will have the opportunity to take two of these four courses. We hope that sustained attention to accuracy in written and oral expression will lead to greater gains for students.
- In addition, we have implemented a system of 1-cr. “maintenance” courses for students to practice oral skills in a more intimate setting. In the fall of 2007, we hope to run a maintenance course in tandem with 1002, 2001, and 2002.
• I don’t know whether this might be helpful for the assessment report, but beginning in the spring of 2007, we implemented a professionalization component in French 4901 Senior Seminar, for which students prepared resumes, a CV, and cover letters in French, and participated in mock interviews (in English), researching (and in some cases, applying for) jobs using their French skills. Of this year’s 8 graduates, one will go to French-speaking West Africa with the Peace Corps, another will soon begin a job as a customer-service representative for French Canadian clients, another will spend a year working in a French HS, yet another will take a year off before applying to graduate programs in French literature. The other four continue to research opportunities to use their French. I feel quite optimistic that the time spent bridging French skills to the working world will pay off for these students. A 2004 graduate is beginning her dissertation in (French) history at UMTC; a 2005 graduate will begin graduate study in French at Boston U this fall. To my mind, these outcomes to attest to the strength of our French program better than formal assessment programs, although this information may not be immediately relevant to the report.

German

From: Edith Borchardt, Professor of German

To: James B. Togeas, UMM Assessment Chair

Date: May 16, 2007
Regarding: German Assessment Documents

Beginning German Sequence:
German has used the placement test to determine outcomes after the first year of FL study, comparing the initial placement scores to the scores obtained at the end of the first year sequence. The data was collected and processed by Lynn Schulz in the Computer Center. I have included the data in the document you are receiving. German uses a communicative approach, and speaking in the target language is central in the Beginning German two-semester sequence, together with the development of reading, writing, and comprehension skills. The outcomes clearly show improvement in the test scores at the end of the first year.

Below are the 2007 results of the assessment test for German 1002, which I gave last Friday, May 11, 2007. In order to have as large a sample as possible, I administered the test during the scheduled finals period, followed by the final exam for the course. I expected to have 100% attendance, but three students did not show. Instead of 18, only 15 took both of these tests. Of these 15, 8 had taken the initial German placement test, and all 8 showed
improvement in their scores, between 1 and 14 points. Supposedly, the other students had never taken German before, although when I asked the class, several students indicated that they had German previously but did not take the placement test. It may be necessary in the future to give the placement test in class in the fall as a pre-test when classes start to include everyone with previous knowledge of German.

Currently, we place students in Intermediate German (2002) with a score between 34 and 37. Except for three students, everyone else (12 out of 15) in this group meets the standard for the beginning intermediate level at the end of German 1002 this year. I am attaching the recommended placement scores. 4 out of the group would now qualify to place into German 2002, second semester Intermediate German. One with a score above 42 actually shows readiness for the third year level. The two students with scores of 27 and 29 may have had difficulty with the oral part of the test. I will check that out with Lynn Schulz, who may be able to tell me where the greatest number of mistakes are located on the scoring sheet. I place great emphasis on speaking and comprehension in class, but these students would have profited from doing the listening portions of our work book in the Language Teaching Center in addition to the work I require for class and in preparation for tests.

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<tr>
<th>EMPLID</th>
<th>LNAME</th>
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Oral testing in FL usually is done by faculty trained in administering proficiency tests. As far as I know, no one in any of the languages here at UMM has been certified to do that. These workshops are costly, and we would have had to participate at our own expense at designated testing centers. It would be advantageous, if UMM were to consider supporting such training workshops, especially if we are offering a FL Certificate after the beginning and intermediate sequence.

One of the things I have been forced to do in German because of a lack of faculty to teach all skill levels appropriately, is to combine intermediate and advanced courses. For example, I taught students enrolled in 2011 (which was cancelled because of the resignation of a junior faculty member, who was not replaced) together with students enrolled in the beginning survey course: German Literature and Culture I. I had a reader, TAUSEND JAHRE DEUTSCHE LITERATUR, which dealt with the historical and cultural background for the literature we were reading. Originally, I intended for the intermediate students to work only with the reader and let the advanced students deal with the primary literature, engaging the two groups in discussion of how the literature and history/culture connected. In the end, though, both levels read the cultural AND the literary materials and did all the written homework and reports on both levels.

**Intermediate German:**

In the past, when I have started German 2002 with a history component, I gave a pre-test with 50 objective questions before showing an educational video to determine how much the students already knew and then compared their scores on the same test after they had seen the video. The pre-test
showed low objective results, while the post-test indicated good to excellent mastery of the subject matter.

The intermediate sequence deals with vocabulary building, idioms, more advanced grammatical structures, and cultural knowledge. Each of these components would have to undergo pre-testing on this level. I usually include 100 idioms (verbs with special prepositions) for which a pre-test is easily possible. I will include such pre-testing in the future.

A large component of the intermediate course is the history of the reunification of Germany and the formation of the United Europe. I have 100 questions regarding this subject matter which I will use as a pre-test when I teach this material again, in order to assess how much students learned from being in the course. This test will also assess how much vocabulary they have learned, since the test uses the vocabulary from a video transcription of “Die große Freiheit.” Without mastery of the vocabulary, students will not be able to comprehend or answer the questions.

**Upper Division Literature Courses:**

For a number of literature courses I teach on the upper division level, I have designed objective tests which I have usually given at the end of the semester. Those tests, however, can also be used as an assessment tool by giving them at the beginning of the course and then again at the end of the semester to determine how much knowledge (i.e., information) students have gained. In the future, I will assess German Classicism and Romanticism, as well as Post-War German Literature in this manner. Assessing critical and interpretative skills, however, is possible only through written essay examinations, reports, and papers.

History

May 22, 2007

To: Jim Togeas, chair, UMM Assessment Committee

From: Roland Guyotte, coordinator, history discipline

Subject: 2006-2007 Assessment Report for UMM History Discipline
In 2006-2007 the UMM history discipline collectively and its members individually actively assessed its major program and individual courses. This brief summary of recent assessment activities will mention, first, discipline-based review of the history major, and, second, individual faculty members’ assessment of history courses they teach.

The UMM history major has long been “outcomes-based,” employing a variety of measures to assess student learning. As long ago as 1995, history at UMM became one of the first UMM programs to be reviewed systematically, first by a discipline self-study, and second, by outside reviewers (Dean Myron Marty of Drake University and Wallace Professor of History Emily Rosenberg of Macalester College). For many years the history discipline has operationalized its objectives in the major according to criteria published in the UMM Catalogue. These include successful demonstration (1) that the student’s program has included a breadth of coursework across regions and time periods, (2) that the student has perceived history and historical questions as a result of thinking about history at UMM, and (3) that the student has developed historical skills and knowledge. Because our major has few specifically required courses, we strive to maintain a close advisor-advisee relationship in the process of planning a student’s major program.

During 2006-2007 the history discipline focused attention on the major’s capstone experience, the two semester research tutorial, History 4110-4120, Tutorial in History. Students and faculty were concerned about uneven-ness in the timely identification of a research topic and the selection of a member of the faculty with whom to work. Following substantial discussion within the discipline and an October forum with history majors, the discipline implemented a new strategy. This approach asked students to identify three possible topics to be submitted to the discipline coordinator by a specified date. The discipline then looked over the projects and assigned a faculty member to each student. We believe that this procedure will get students thinking about their topics earlier and will also result in more efficient and fair uses of discipline human resources. We plan to monitor the new tutorial approach.

With respect to coursework in history, several members of the discipline developed formative and summative exercises or other assessment measures in courses as varied as History 1101, Introduction to World History to 1500; History 1301, Introduction to U.S. History; History 1601, Latin American History: A Basic Introduction; History 3301, Red, White, and Black: Race/Culture in Early America; History 3351, Modern Europe; and History 3606, Ancient Maya Civilization. While this report summarizes the instructors’ findings, full accounts of the assessment protocols and results can be made available if desired.

The instructor of World History to 1500 discovered that student performance on the pre- and post-test, a simple measure of factual recall given in January and in late February, varied substantially for different parts of the course. Students did better on the Neolithic portion than on that which considered World History between 5000 and 500 BCE. In the first instance students initially knew less about the topic but learned and retained more, whereas in the other the learning curve was not as steep. The instructor concluded that pedagogical techniques may have influenced the outcomes: in the sections where
students role-played and sought holistic applications of knowledge they remembered more, even though the learning results were not as favorable when the course employed student debates on issues raised by the readings. The instructor intends to do more to clarify the conceptual framework of the second portion of History 1101.

In History 1301, Introduction to U. S. history, the instructor devised an assessment instrument administered on the first and last days of class that sought to measure thinking as well as factual recall, with mixed results. On simple factual matters involving definitions of terms, students overwhelmingly learned the difference between a “primary” and a “secondary source” and did well describing the concept of “public memory,” significantly emphasized in the first book read for the course. They did not do as well identifying Frederick Jackson Turner’s “frontier” thesis, discussed during the first week in a lecture about various single-theme approaches to U. S. history, at the end of the term. Students did fairly well on the open-ended questions, which addressed central themes in various books read for the course and asked students to generalize from them. He concludes that more interaction between the instructor and students during class time, not entirely easy in a class enrolling 65-70 students, may more actively engage them in lecture material.

The instructor of History 1601, Latin-American History: A Basic Introduction, reports that “the pretest did not work well. Consequently it was not used again at end of course. I will redesign pre/post-test for next year.”

In History 3301, Red White and Black: Race/Culture in Early America, the instructor asked students to assess how well the course had met its four substantive goals and its six process goals on a 6 point scale. Students expressed strong satisfaction (5.5, 5.3, 5.3) with three of the four substantive goals and somewhat less confidence (4.3) on the fourth – “the relative importance of cultural and material circumstances in shaping human behavior.” The instructor will give more attention to this theme, embedded in course readings, in the future. Students were less confident that the course met its six process goals (mean of 4 as compared to mean of 5.1 for substantive goals). Since the written work and discussion had demonstrated, for example, students’ increased critical stance toward the sources and greater sensitivity to the making of historical “truth,” the instructor concluded that he needs to make more explicit connection between the stated goals and substantive discussions as the course progresses.

The pre- and post-test survey designed for History 3151, Modern Europe, included different kinds of questions designed to measure student learning: multiple choice, open answer, yes/no, and a question which required students to arrange a set of eleven events in chronological order. She reported a high level of satisfaction in the improvement in the chronological-ordering question and some others, but discovered that the yes/no question was not an effective one. She also concluded that the course should spend more time on the 1970s and 1980s as well as the establishment of the European Union. A rushed pacing of the last weeks of the course expressed itself in little improvement in student scores on the pre/post test instrument. The instructor also reports that she plans to
use a different assessment model for the course on Nazi Germany, with special attention to information about different learning styles.

Finally, the instructor of History 3606, Ancient Maya Civilization reports that the average pre-test score was 10%, while at the end of the term students averaged 77%, with none under 50%. He adds that, “Since I will not again teach the Ancient Maya before I retire, no improvements are planned.”

Several members of the discipline volunteered that their experience with a more formal pre/post test assessment was a first time venture, though all of us have more informally measured our successes and failures by exams and papers, and noted our students’ responses to the content and pedagogy of our courses in the Student Evaluation of Teaching forms, uniquely used at UMM in all classes, especially the open-ended responses. This first year of course-by-course assessment will doubtless lead to continued refinement of individual courses and discussions about our major and general education offerings in the discipline as a whole.
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1 Introduction

The math senior seminar consists of a paper (typically 10-15 pages) and presentation (40 minutes long) created by the student, under the supervision of a faculty advisor. The student works on the senior seminar for two semesters. Students may approach the senior seminar from a variety of directions—they may build on previous work they have done as a Morris Academic Partner (MAP), through the Undergraduate Research Opportunity Program (UROP), or other research experience; they may reproduce or extend a mathematical concept from a primary paper in the literature; or they may use multiple references to obtain an understanding of a mathematical concept. In all cases, the student should strive for some degree of originality in their project.

The degree of independence in student work varies—some students work closely with their faculty advisor, and others work independently. In all cases students should periodically meet with their faculty advisors to receive feedback as they create their project proposal, paper and presentation.

The student submits a project proposal near the end of the first semester they are enrolled in the senior seminar. There is no standard template for what should go into a project proposal, it is used to ensure the student has made some progress on their paper in the first semester, and has an outline of what still needs to be completed.

Before the presentation, each student's near final version of their paper is read closely by a second reader from the math faculty, who provides constructive feedback on the paper before it is read by the rest of the math faculty. The entire math faculty meet with the student for a short (15 minute) meeting before the presentation. At this meeting, the faculty give their responses to the paper, and may offer suggestions to the student about the paper or the presentation.

Audience members at the presentation fill out an assessment tool (see Appendix). The results from the audience assessment can help faculty assess the quality of the presentation, but its primary use is to provide the student feedback on the presentation. The presentation should be at a level appropriate to the audience (math majors who may not be familiar with the specifics of the seminar topic). Both the paper and presentation should exhibit a significant mathematical component and be of a high professional quality.
After all the students have finished their presentations, the faculty meet to discuss the senior seminar process and assign grades (A-F) to the students. A student's grade is ultimately assigned by the faculty advisor for the student, and this meeting helps ensure consistency in the grading from one faculty member to the next. Students are made aware of the senior seminar time line and expectations of the course through communications and meetings with the senior seminar coordinator, their faculty advisor, and via the course webpage (http://www.morris.umn.edu/academic/math/policies-seniorsem05-06.html).

2 Grading Scheme

- 30% Active participation throughout the process
- 10% Project proposal with mathematical foundation and research plans
- 30% Final written paper
- 30% 40-min presentation

The above grading scheme is meant to give an understanding of the relative importance of the various components of the senior seminar. Final grades are typically arrived at in a holistic manner.

3 Minutes from Faculty Discussion on May 5, 2006

Nine students presented senior seminars in spring 2006, and one student presented in fall 2005. The participation of the students was deemed good. Some students worked very independently, with a limited amount of interaction with their advisors, and others worked more closely with their advisors. In past years, students who worked more independently produced good final products, but this year many of the students whose paper and presentation were not of high quality did not exhibit good participation or progress in the fall. To help with participation in the first semester of the project, the Senior Seminar Coordinator will check with the faculty to find out which students they are advising, so any any student who is not meeting with a faculty advisor can be identified earlier in the process. Some students told the Coordinator they had an advisor, and the faculty member was unaware that the student had identified them as their advisor. The presentations were deemed good as a whole. A few presentations were deemed excellent, with students exhibiting a professional demeanor, excellent mathematical content, or a presentation which was engaging to the audience. A few students produced very weak presentations, with unclear mathematics, and in one case incorrect mathematics. A few students could have improved their presentations with more practice. The final paper versions were deemed good as a whole. A few papers were deemed excellent, being well written and delving deeply into a mathematical concept. These students incorporated the suggestions for improvement of the near final versions made by the faculty. Some of the final papers could have benefited from a more in-depth look at the topic, or making the mathematics used more transparent to the reader. The faculty felt the senior seminars for 2005/06 were, as a whole, of good quality. There were four students who excelled and produced excellent presentations and papers.
Unfortunately, four students did not produce very good papers or presentations. In these cases, the papers and presentations did not exhibit much mathematical depth, and the students did not follow the advice of the faculty advisors to go deeper into the material. Along with this lack of depth, three of the four papers also showed very little originality. In two cases, a contributing factor was the students submitted weak proposals and left too much of the work until just prior to the presentation.

A Appendix

This appendix contains the numerical summary of the data from the assessment sheets which are distributed to the audience at the senior seminar presentation. The assessment is only on the student's presentation.

Assessment Data for Fall 2005 and Spring 2006

There was one student who completed the senior seminar in fall 2005, and nine students who completed their senior seminar presentation in spring 2006.

1. Presented a clear explanation of a mathematical topic

<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>8</th>
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<td>26</td>
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<td>4.64</td>
<td>3.16</td>
<td>4.15</td>
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<td>3.59</td>
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<td>0.76</td>
<td>1.10</td>
<td>0.50</td>
<td>0.93</td>
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</tbody>
</table>

2. Spoke clearly, correctly, competently, and confidently

<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>8</th>
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<td>Mean</td>
<td>4.64</td>
<td>4.55</td>
<td>3.29</td>
<td>4.42</td>
<td>4.22</td>
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<td>1.05</td>
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</table>

3. Used presentation tools effectively

<table>
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<tr>
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<th>4</th>
<th>5</th>
<th>6</th>
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4. Displayed a depth of understanding in the area of research

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<th>4</th>
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<td>0.85</td>
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<td>1.00</td>
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<td>0.80</td>
<td>1.15</td>
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<td>0.93</td>
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</table>
Presented a clear explanation of
a mathematical topic

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presented</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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</table>

Spoke clearly, correctly,
competently, and confidently

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spoke</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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</table>

Used presentation tools
effectively

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
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</thead>
<tbody>
<tr>
<td>Used tools</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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</table>

Displayed a depth of
understanding in the area of
research

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
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<tbody>
<tr>
<td>Displayed</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
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</table>

Please take a moment to provide an honest and thoughtful assessment of the presentation.

What were the main strengths of the presentation?

What suggestions do you have for improvement?

Further comments:

Calculus 1 Assessment Fall 2006
Instructor: Barry McQuarrie

This assessment concerns the student's understanding of functional notation \( y=f(x) \) and simple algebraic simplifications.

Assessment From Quiz #1:

1. Given \( f(x)=1/x \), simplify the quantity \([f(x+h)-f(x)/h]\) to the point where substituting \( h=0 \) does not give \([0/0]\).
Here are the number of students who completed this problem with a Good, Fair, and Poor level of understanding:

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
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<tbody>
<tr>
<td># of Students</td>
<td>12</td>
<td>8</td>
<td>13</td>
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</table>

**Feedback**

To assist the students who were unable to answer this question correctly, the necessary concepts were written individually on each student's quiz, and the concepts were discussed in more detail in class and during an evening review session. The students who did poorly on the quiz had difficulty forming the quantity $f(x+h)$. Emphasis was placed on making the substitution $z=x+h$ to help students form $f(x+h)$ correctly. This emphasis was not made during the initial lecture on this topic.

**Reassessment From Test #1:**

(2a) Given $g(x)=\frac{1}{x^2}$, simplify $\frac{1}{h}(g(x+h)-g(x))$ so that the $1/h$ in front cancels.

Here are the number of students who completed this problem with a Good, Fair, and Poor level of understanding:

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
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<tbody>
<tr>
<td># of Students</td>
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<td>10</td>
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**Assessment of Music 3311.**

**Conducting Techniques: Instrumental and Choral Conducting Skills**

**Overview:** The study of music throughout the ages has revolved around performance. The conducting class will explore music from different time periods and different styles. The student conductor will develop the ability to show in conducting motions all of the aspects of the piece or example being conducted. The pieces or examples conducted are progressively more complicated and require greater skill to effect the proper musical interpretation from the performing ensemble they are directing. By the end of the course the student should be able to work through, albeit in a rather basic manner, music from all periods and styles in a wide variety of genres

**Learning Objectives:**
1. The ability to conduct various meters and tempos; i.e. the fundamentals of conducting movements
2. Identify and demonstrating clear cues and musical expression
3. Gain the ability to hear the music on the printed score and identify errors or inaccuracies in performance by ensemble.
4. Have a clear reference to music terms found on the respective musical score
5. Communicate through gestures, the needed musical expression indicated by the score
6. Make the critical decisions needed to interpret the composers intentions as seen in the score of music
7. Develop a clear perspective of musical analysis enabling one to interpret the musical score.

Describe Data collected:
In working through the chapters of the conducting text, benchmarks are reached at the end of each chapter. A conducting project example is used for the student to demonstrate these benchmarks. The instructor prepares the conducting students in the basic abilities needed for each project example. Each student conducts the example. The student conductor is video taped. Numeric scores are given by the instructor, students in the class ensemble and the student director for the various goals of the particular assignment.

Provide the Actual Data:
At the completion of each project example, the instructor, the participating students and the student director assess the student conductor’s performance using a scale of 1 to 10 (10 being the highest) for each benchmark item from the conducting chapter. The numbers are averaged out and compared with those of the instructor and those of the student director to get several views of the assessment.

Describe how it was used to improve student learning
The instructor and the student conductor review the video of the chapter example performance, working on re-enforcing successful moves and analyzing unsuccessful ones. The student and the instructor compare ratings from the various sources and come to an understanding of the shortfalls, the criticisms and the successes. The following week of class will focus on shortcomings experienced by many of the students in articulating a certain motion, cue or overall musical expression in their conducting.

Describe how the improvement was measured
At each chapter the class and the instructor work for a clear understanding of the new conducting material and how to progress with their conducting movements. The measure of success comes when the conducting student, the instructor and the students in the class come agreement on the scores given for various aspects of the project. As part of their final exam, the conducting students viewed all of their videos of chapter projects and were asked to write a narrative of their progress. To a student, they were amazed at how far they had progressed. There were also several students who were
amazed at their lack of consistent progress and the need for more improvement. The information acquired through this self-analysis and the instructor’s comments on each student are carried forward to the instructor of the next class in the conducting sequence, “Advanced Instrumental Conducting and Materials” and “Advanced Choral Conducting and Materials.

**Improving student learning**

The videotaping of the student conductors directing chapter projects was initially used only to show the students their improvements or areas that needed improvement. Also, initially there were only comments from the class members in an open discussion of how he/she had done. It became clear that this tended to bring out either very favorable comments or evaluations by peers that were not always constructive. By shifting to a number system for each skill or new conducting challenge, a better interpretation and reflection on the students' work was gained. It proved most successful and all of the comments, scoring etc tended to create a very favorable dialogue between the students and a constructive way to share information and progress. The final evaluation of all of the videos came about in an effort to have the students see and understand the progress that they had made and it appears to have been very valuable to the students from their comments following the course.
The Philosophy Discipline has the following general and specific goals:

**General Goals.** The philosophy program is designed to offer students the opportunity to study systematically the works of significant figures in philosophy; investigate the fundamental problems and systems of thought that frame philosophical inquiry; and develop the logical, analytical, writing, and conversational skills necessary for stimulating and fruitful philosophical inquiry. **Specific goals** are marked in bolding in the following questionnaire filled out by graduating majors:

**Philosophy Discipline Questionnaire**

1. A primary Discipline goal is to enhance **analytical skills.** In general, this involves cultivating an ability to evaluate an argument, position, theory, etc.; to trace pertinent implications of the argument, position, theory, etc.; to introduce novel considerations or arguments that bear on the argument, position, theory, etc. How would you rate the Discipline’s program for meeting this goal?
2. A primary Discipline goal is to cultivate **the ability to draw connections among theses, principles, positions,** etc. introduced or discussed in one philosophy class with those introduced or discussed in other philosophy classes. How would you rate the Discipline’s program for meeting this goal?
3. A primary Discipline goal is to cultivate **effective oral communication,** including the ability to give clear oral presentations or summaries of issues, principles, theses, etc.; formulate relevant questions clearly; and tender clear responses to questions. How would you rate the Discipline’s program for meeting this goal?
4. A primary Discipline goal is cultivate **the ability of students to write well.** How would you rate the Discipline’s program for meeting this goal?
5. A primary Discipline goal is to ensure that students have a sufficiently **broad foundation in ethics** (broadly construed). How would you rate the Discipline’s program for meeting this goal?
6. A primary Discipline goal is to ensure that students have a sufficiently **broad foundation in the history of philosophy** (ancient, medieval, and modern). How would you rate the Discipline’s program for meeting this goal?
7. A primary Discipline goal is to ensure that students have a sufficiently **broad foundation in logic.** How would you rate the Discipline’s program for meeting this goal?
8. A primary Discipline goal is to ensure that students have a sufficiently **broad foundation in epistemology, metaphysics, and philosophy of language.** How would you rate the Discipline’s program for meeting this goal?

The specific goals for the Capstone Experience, i.e., Phil 4901 Senior Philosophical Defense are marked in bolding in the following questionnaire filled out by graduating majors:

**Senior Philosophical Defense Questionnaire**
1. A primary goal of this course is to ensure that you can give a clear, in depth written exposition of some view in philosophy (for example, an argument, a theory, or a position). How would you rate the course for meeting this goal?

2. A primary goal of this course is to ensure that you can defend or criticize some view in philosophy (for example, an argument, a theory, or a position). How would you rate the course for meeting this goal?

3. A primary goal of this course is to ensure that you can give a clear oral presentation of some view in philosophy (for example, an argument, a theory, or a position). How would you rate the course for meeting this goal?

4. A primary goal of this course is to ensure that you can give a clear oral defense of some view in philosophy (for example, an argument, a theory, or a position). How would you rate the course for meeting this goal?

5. A primary goal of this course is to ensure that you can conduct thoughtful discussion with peers and faculty on some view in philosophy (for example, an argument, a theory, or a position). How would you rate the course for meeting this goal?

At the end of the program all our majors fill out two questionnaires containing the questions cited above. The numerical values in the responses to the questionnaire concerning the discipline are all positive and ranging from 5 (more than satisfactory) to 7 (exceptional). Among the greatest strengths of the discipline students mention its faculty, its high intellectual standards, rigorous expectations for writing, critical skills gained in the classes, the breadth of the material covered, the quality, commitment, and accessibility of the faculty, their enthusiasm for their field. Again logical and critical skills are mentioned among the most important things earned going through the philosophy program. Among suggestions for improvements for the discipline, students mention more group work in the classroom, and even more rigorous analysis of texts, and practice in writing several drafts of a paper. A listing of the numerical values and of the narrative comments provided by the students is included in this report.

With regard to the Senior Philosophical Defense, again the numerical values are very good and range from 4 (satisfactory) to 7 (exceptional). Students thought that the individualized meetings with the instructor and the process of multiple revisions of the same paper provided them with a very useful experience. Also the panel discussion with several faculty members is praised by the students. Students also suggest that it might help to plan more time for the development of the thesis (even possibly two semesters) and that it might be useful to have some kind of practice before the actual defense.

The Philosophy discipline assesses student learning concerning these general and specific goals within its courses by means of exams, quizzes, oral presentations, and papers. Each of the faculty members devises different tools to assess student learning with regard to the discipline goals. The following is a report concerning the assessment of student learning developed by Professor Tamler Sommers in Phil 2111 Introductory Ethics:

**Assessment of Student Learning in Phil 2111 Introductory Ethics**

**Tamler Sommers**

The exams, papers, and presentations in my Introductory Ethics course provide the opportunity for quantitative analysis of the progress students have made in achieving our discipline objectives. My additional goal this semester was to evaluate their progress in
contexts in which the students were not concerned about grades. In particular, I wished to test their ability to present and critically evaluate arguments from our texts. In the seventh week of the semester, I asked the students to present a valid numbered argument drawn from Peter Singer’s essay “Famine, Affluence, and Morality.” I then asked them to identify premises that were vulnerable to criticism. Singer’s essay is unusual in its clarity—and we had recently completed a section on philosophical terms and methods—and so I thought that introductory students would have a shot at completing this task successfully. The idea was to give them another essay of similar difficulty—Kai Nielson’s “Ethics Without God”—at the end of the semester and measure their progress in breaking down philosophical arguments.

I had 45 students in two sections. For the first essay, only 4 students were able to produce a valid argument and recognize premises that were open to plausible criticism. A large majority of the students were not even close to performing the task successfully. For the second essay, 7 students (still a significant minority) successfully completed the task—but almost everyone, to varying degrees, was on the right track. Unfortunately, the ‘all-or-nothing’ design of the assessment did not permit a quantitative analysis of the significant progress made by students who did not achieve total success.

For future sections, I plan to make the following changes. First, the assessment will no longer be an all-or-nothing affair. I will assign scores on a scale from 1 (the student has no idea how to approach this problem) to 7 (complete success) and compare the total and average scores over the course of the semester. A sliding scale should give me a more accurate and comprehensive account of their progress in this area. Second, in addition to having the students break down arguments from philosophical texts, I will ask them to critically analyze ethical arguments from articles or opinion pieces in the popular press. This will give the students the opportunity to use their reasoning skills in areas they feel have immediate relevance, and it will give me a means of measuring their abilities outside the context of the philosophical essay. Finally, I intend (privately) to give the same sliding scale scores for the students’ informal class presentations, in order to measure their progress in acquiring conversational skills necessary for fruitful philosophical inquiry.

The Philosophy faculty discusses all the results of the assessment of student learning from both individual courses and from the questionnaires filled out by our graduating majors at the beginning of the academic year and plans for changes in the curriculum, in the pedagogy, and/or the requirements for the major/minor that seem more likely to address students concerns. We will have this meeting at the beginning of the Fall Semester 2007.

We are developing an additional tool to help us assess student learning both in the Philosophy Program and in the Senior Defense. We do receive feedback from our graduating majors concerning both the program and the defense. However, the faculty discusses the achievement of the program’s and defense’s goals only orally at the end of our majors’ senior defenses. We want to add two questionnaires parallel to the ones our graduating majors fill out but with the questions addressed to the faculty and requiring to
numerically evaluate the students’ attainment of the listed program and defense goals. We are confident these new tools will significantly increase our ability to assess student learning in our program. We will start using these new faculty questionnaires at the end of senior defenses during the next academic year.

Physics

This came by email from Mike Korth, 09/07/07.

Jim,

Sorry to be so slow in getting back to you. You had asked for something more about our capstone course.

Senior Thesis course objectives:
(1) Familiarization with current research topics in physics.
(2) Familiarization with how to search and read physics research literature.
(3) Develop skills of expository scientific writing.
(4) Develop skills of oral presentation of scientific ideas.
(5) To apply undergraduate knowledge in physics to current research topics.

Through a collaborative process with other students and faculty, each student develops a proposal to study a topic of current research interest in the physics community. After approval of the topic, the student works with an assigned faculty advisor to develop the paper and oral presentation. The end products are a written report and an oral presentation. (Drafts and practice presentations are required.) The physics faculty meet to judge the extent to which each student came to understand the topic, how well the student utilized the research literature, and how well the student presented the topic in both written and oral presentations. The faculty also discuss how the course could be altered to increase students' achievement of the course objectives.

In the past year or two, we have observed a need for more structure in the course to keep students on track during the long periods of time we had allotted to study and writing. As of the fall of 2007, we are implementing a series of new milestones in the course in order to provide such structure. These milestones will encourage students to stay on track and will provide more opportunities for specific and detailed feedback from faculty as students are working on their papers and presentation.

A couple of years ago, we observed that some students were having difficulty selecting topics for senior thesis projects. Due to a lack of awareness of current research, the students were taking too long to identify a topic, which resulted in less time to do the requisite study and writing, which contributed to the poorer outcomes. In part to address this, the physics discipline created a course we refer to as "journal club". In this course, students interact with current research literature in physics in a more informal, discussion-based format. One of our goals for journal club was to expose students to current research topics earlier in their undergraduate years so that they would have a
better start on the first two objectives of senior thesis. Because this new course has only been in place for two years, this fall is the first time we expect to be able to see whether this makes a difference for our students in senior thesis.

I hope this is helpful. Let me know if you would like any editing or clarifying.

Mike

Political Science

Political Science Discipline Assessment
2006-07

Mission:
The mission of the Political Science discipline is to help students develop and use strong analytical skills and critical thinking in their analysis of theories, institutions, and processes in political science. The program prepares students for work in government, non-profit organizations, and private business, and it prepares students for additional training in graduate and professional programs.

The Political Science Discipline at UMM is a rigorous program that offers students a solid background in a key liberal arts major. The program instills in students a lifelong love of learning about government and encourages participation in that process. The Political Science program also encourages the students to participate in their community by many means, including seeking internships in and around the community.

Discipline Learning Objectives:
The Political Science Discipline has identified three learning objectives:

Learning Objective 1: To be able to critically analyze, interpret and synthesize the major theories that are prevalent in a major subfield of political science.

Learning Objective 2: To become more empowered to participate in government due to increased familiarity with politics and government.

Learning Objective 3: To be adequately prepared for entrance into graduate or professional school.

The Political Science discipline has been developing its assessment program for several years. Key to the assessment plan is the faculty evaluation of the capstone senior seminar experiences that became mandatory beginning with the 2003-05 UMM catalog. Because UMM allows students to meet the program requirements of any bulletin that is in effect during their academic career, graduating seniors were not required to take the capstone experience until the 2006-07 year. As a result, the 2006-07 Political Science assessment features significantly more direct observation of student performance than previous years’ assessments.

Capstone Data: Methods
All Political Science majors that entered UMM in 2003-04 were required to enroll in one of three senior seminar courses during their senior year:
Each of the 4 credit seminars was offered in the fall, with most students receiving a K grade indicating that more work was be completed in the spring semester. The projects were due 7 days prior to the oral presentation of the projects. The oral presentations were held on five Tuesday afternoons in February and March of 2007. Students had on average 15 minutes to present their papers with an additional 15 minutes for questions from the audience.

Following the completion of the senior seminar presentations, the Political Science faculty met to evaluate the quality of the papers and presentations. The faculty discussed each paper, and evaluated each using 11 criteria. The 11 criteria are:

1. Description of the Research Question
2. Quality of Literature Review
3. Demonstrated Knowledge of Field
4. Statement of Hypothesis/Thesis
5. Methodological Rigor
6. Quality of Writing
7. Evidence of Scholarly Editing Skills
8. Quality of Oral Presentation
9. Overall Command of Material
10. Made Contribution to Field
11. Did Student Demonstrate Readiness for Graduate/Professional/Law School?

For each of these criteria, the determination was made whether or not the paper and/or presentation failed to meet expectations, met expectations, or exceeded expectations. The expectation for each of these criteria is whether or not the quality demonstrated in each of the criteria was commensurate with the quality expected of a political science graduate from a top liberal arts college and was of sufficient quality to present at a top undergraduate research conference.

**Capstone Data: Findings**
The overall quality of the papers and presentations was mixed. Table 1 displays the results of the summary faculty assessment of the papers and presentations.

There were several areas where students failed to perform at the levels expected of the political science faculty. For example, the political science faculty believed that over 70% of the papers failed to make a contribution to the field or demonstrate appropriate methodological rigor. More than two-thirds of the papers had inadequate literature reviews and unclear or poorly developed hypotheses.
On a more positive note, more than three-fourths of the papers evidenced writing quality and scholarly editorial skills of a political science major at a top liberal arts program. Two-thirds of the presentations met or exceeded the high expectations set by the discipline’s faculty. More than half of the papers demonstrated an adequate knowledge of the field and an overall command of the material. Over 40% of the papers adequately discussed the nature of the research problem.

Finally, the political science faculty believed that just over half of the students demonstrated readiness for graduate, law, or professional school in the writing and presentation of their senior papers.

As a result of these findings, the faculty made several changes to the program, the senior seminar course, and the method of assessment. These changes are discussed in the conclusions section of the assessment.

Table 1. Quality of Political Science Senior Capstone Papers, 2006-07

<table>
<thead>
<tr>
<th></th>
<th>% Failed to Meet Expectations</th>
<th>% Met Expectations</th>
<th>% Exceeded Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made Contribution to Field</td>
<td>71.4% (15)</td>
<td>23.8% (5)</td>
<td>4.8% (1)</td>
</tr>
<tr>
<td>Methodological Rigor</td>
<td>71.4% (15)</td>
<td>28.6% (6)</td>
<td>0% (0)</td>
</tr>
<tr>
<td>Quality of Literature Review</td>
<td>66.7% (14)</td>
<td>23.8% (5)</td>
<td>9.5% (2)</td>
</tr>
<tr>
<td>Statement of Hypothesis/Thesis</td>
<td>66.7% (14)</td>
<td>28.6% (6)</td>
<td>4.8% (1)</td>
</tr>
<tr>
<td>Knowledge of Field</td>
<td>57.1% (12)</td>
<td>28.6% (6)</td>
<td>14.3% (3)</td>
</tr>
<tr>
<td>Overall Command of Material</td>
<td>52.4% (11)</td>
<td>38.1% (8)</td>
<td>9.5% (2)</td>
</tr>
<tr>
<td>Description of the Research Problem</td>
<td>42.9% (9)</td>
<td>52.4% (11)</td>
<td>4.8% (1)</td>
</tr>
<tr>
<td>Quality of Oral Presentation</td>
<td>33.3% (7)</td>
<td>52.4% (11)</td>
<td>14.3% (3)</td>
</tr>
<tr>
<td>Quality of Writing</td>
<td>23.8% (5)</td>
<td>71.4% (15)</td>
<td>4.8% (1)</td>
</tr>
<tr>
<td>Evidence of Scholarly Editing Skills</td>
<td>23.8% (5)</td>
<td>71.4% (15)</td>
<td>4.8% (1)</td>
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<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
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<tbody>
<tr>
<td>Did Student Demonstrate Readiness for</td>
<td>52.4% (11)</td>
<td>47.6% (10)</td>
</tr>
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</table>
Student Survey: Methods
In addition to the faculty assessment of senior seminar papers and presentations, graduating seniors were also asked in the spring of their senior years to assess how well the discipline objectives were met. The full survey can be found in Appendix A.

Student Survey: Findings
Table 2 demonstrates that more than half of the graduating seniors strongly agreed that they were able to critically analyze, interpret and synthesize the major theories that are prevalent in their major subfield of political science. An additional 40% somewhat agreed with that statement.

Table 2: Student Self-Assessment of Their Ability to Comprehend Major Theories

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Somewhat Agree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Strongly Disagree (4)</th>
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<td>9</td>
<td>7</td>
<td>0</td>
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</tr>
<tr>
<td>53%</td>
<td>41%</td>
<td>0%</td>
<td>6%</td>
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</table>

Students also commented on specific programmatic elements that assisted them the most in understanding these theories. The full results can be found in Appendix B.

Students were also asked to assess their comfort in participating in government. As shown in Table 3, over three-fourths of students indicated that they were more empowered to participate in political activities due to their increased familiarity with politics and government.

Table 3. Student Self-Assessment of their Ability to Participating in Government

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Somewhat Agree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Strongly Disagree (4)</th>
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<tr>
<td>4</td>
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<td>1</td>
<td>3</td>
</tr>
<tr>
<td>24%</td>
<td>53%</td>
<td>6%</td>
<td>18%</td>
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</table>

Appendix B lists some of the specific programmatic elements were most helpful to students in increasing their empowerment.
Finally, students were asked to assess their readiness for graduate and professional school. Table 4 shows that three-fourths of students either strongly agree or somewhat agree that they are prepared for entrance into graduate or professional school.
Table 4. Student Self-Assessment of their Preparation for Graduate School.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>(1)</td>
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<tr>
<td>8</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>50%</td>
<td>25%</td>
<td>19%</td>
<td>6%</td>
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</table>

Appendix B lists some of the specific programmatic elements that students identified as being most helpful in preparing them for graduate school.

**Changes Made in Response to Assessment:**

In response to the results of the senior seminar assessments and the student surveys, several changes are being adopted by the discipline. These include both changes to the process of assessment and to the program itself.

Recommended changes to assessment process and the senior seminar courses:

1) Provide the assessment forms used by faculty to students at the beginning of the senior seminar course.
2) Have the students complete the written surveys after the completion of all senior seminar presentations. Students will then be able to reflect more comprehensively on the quality of the program.
3) Add measures to assess information literacy.
4) Add measures that student adequately contextualized the “fit” of their paper within the field.
5) Stress to students the differences between scholarly v. non-scholarly sources in all courses offered in the discipline.
6) Extend discussion in each of the discipline’s courses of the importance and methods used to create a good bibliography.
7) Discuss with senior seminar students the importance of the question and answer period and model good response techniques.
8) Add a “Not Applicable” field to the survey and faculty assessments.
9) Emphasize that attendance and participation is required and will be graded. Students must attend 60% of the presentations.
10) The political science faculty should meet before the fall semester begins to enhance the coordination of the senior seminar courses.
11) The discipline should request permission from the student authors of outstanding papers to scan them and put them on the discipline website.
12) The senior seminar sequence should be split so that students enroll in 2 credits in the fall of their senior year and 2 credits in the spring of their senior year.
Proposed changes to the political science program:

1) Offer International Relations Theory annually. Several students did not demonstrate an adequate theoretical understanding of international relations.

2) Major changes in Political Theory are needed. The faculty were disappointed in the quality of both the papers and the presentations of students in the subfield.

3) Political Science faculty should emphasize and offer more opportunities for students to create quality literature reviews and research designs.

4) The use of EndNote should be supported by the discipline.

Conclusions:

The initial findings of the discipline’s assessment demonstrate that significant improvements are needed in several areas. Significant changes have been adopted both in the methods of assessment as well as to the political science program. Additional results next year will provide additional information as to the characteristics of our graduates and the need for additional assessment and programmatic changes.
Appendix A: 
Survey of Political Science Graduates 
University of Minnesota at Morris

Dear Political Science Graduating Senior,

Please take a moment to complete this short questionnaire. The information that you provide will assist us as we continue to improve our program.

Sincerely,
The Political Science Faculty

Area One: Understanding Politics
1) I am able to critically analyze, interpret and synthesize the major theories that are prevalent in my major subfield of political science.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
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<th>Strongly Disagree</th>
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2) List and describe the things in the political science program that best helped you develop skills to critically analyze, interpret, and synthesize the major theories in your subfield of political science. If you wish, identify specific courses, professors, or learning activities that best helped you develop these skills.

3) What additional things can the political science program do to further enhance the development of these skills?
Area Two: Comfort with Participation in Government

4) I am more empowered to participate in political activities due to my increased familiarity with politics and government.

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Somewhat Agree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Strongly Disagree (4)</th>
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</table>

5) List and describe the things that the political science program did that best helped you to become more empowered to participate in political activities. If you wish, identify specific courses, professors, or learning activities that best helped you become more comfortable with political participation.

6) What additional things can the political science program do to further empower you to participate in politics?
Area Three: Preparation for Graduate and Professional School

7) I am adequately prepared for entrance into graduate or professional school.

<table>
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<tr>
<th>Strongly Agree (1)</th>
<th>Somewhat Agree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Strongly Disagree (4)</th>
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</table>

8) List and describe the things that the political science program did that best helped you to prepare for graduate or professional school. If you wish, identify specific courses, professors, or learning activities that best helped you prepare for graduate or professional school.

9) What additional things can the political science program do to further enhance your preparation for graduate or professional school?

10) Please give your overall assessment of the political science program. What are its greatest strengths? What can be improved?

Thank you for your feedback. Your responses will be used to shape the future direction of our program!
Appendix B:  
Survey of Political Science Graduates  
Summary of Responses 2007

Area One: Understanding Politics
1) I am able to critically analyze, interpret and synthesize the major theories that are prevalent in my major subfield of political science.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
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<td>53%</td>
<td>41%</td>
<td>0%</td>
<td>6%</td>
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</tbody>
</table>

2) List and describe the things in the political science program that best helped you develop skills to critically analyze, interpret, and synthesize the major theories in your subfield of political science. If you wish, identify specific courses, professors, or learning activities that best helped you develop these skills.

Responses from Respondent:
1: I had many of the abilities prior to attending U of MN-Morris. I learned many of the major theories in Pol Part & vting Beh, Media & Politics, Les process, & Minorities & public policy.
2: *Sponsored events and engagements activities.
   *Introductory courses that encouraged participation.
   *Discussion with peers outside of class.
3: -writing papers and doing projects emulating the style & type of literature looked at in the class; ie research papers, notecards, conlaw paper
4: I had a some what limited knowledge in this area before entering UMM, however, while @ UMM my knowledge of these subjects has increased significantly by taking Prof. Thorson’s classes in Political Science (Am), the presidential powers class, and being involved in Student groups on campus. Prof. Hunt’s classes also helped me better understand Political ideologies outside the US and main stream.
5: Research! Any upper-level class w/ Paula that involved research was equally integral in developing my ability to write/think critically.
6:
7: Dr. Greg Thorson- any course he teaches helps students with these skills. He helps students examine materials & issues as a much higher level of analysis then other courses.
8: -Discussions
   -Major Research Papers
9: -Papers
   -research papers
- Lectures/Textbooks
- Class simulations/Discussions

10: Voting Behavior
   Paula Oloughlin
   Seung-Ho Joo
   Greg Thorson

11: Research papers in addition to some class discussion of current events are probably the two activities that best develop critical analysis skills. However, both of those activities are only as good as the effort students put into them. Also, these activities are not limited to poli sci or are present in all poli sci courses.

12: Subjective Skills
   - Theory, research skills
   - Paula, analysis skills
   - Judicial classes, comparison skills
   - All of the above

13: It is difficult to say precisely. I feel as though different courses added different values. International Law lent a great deal of perspective in understanding.

14: - William Hunt
   - Any theory classes
   - Hunt’s discussion-based courses
   - Hunt’s insistence that I actually use critical thought and analysis in my work.

15: Writing papers
   - Tests
   - Simulations/Debates

16: I think that the political theory classes are really helpful.

17: Angie Bos (media & politics) → semester long research paper
   - I enjoyed many of the international classes

3) What additional things can the political science program do to further enhance the development of these skills?

Responses from Respondent:
1: *
2: *Ask students to think and analyze-creating their own analysis-while teaching them how to do so rather than having them read and report on pre-existing analysis by stuffy dead guys.
3: More research (not necessarily performing independent research, but at least completing a design, which necessitates a strong understanding of relevant lit.)
4: Further emphasis in the political ideologies of the world, ie, democrats, liberals, republicans, conservatives, communists, etc. Perhaps offer a class based on this principle.
5: Provide incentives so that people actually read their assignments and can discuss them!
6: The American subfield has good classes in behavior & institutions, but there are very little policy options, which people here are interested in.
7: Improve the senior sem. program, as of now this so called “capstone” is nothing but an annoying and useless course one is forced to do to get your degree, as of now the senior sem program does nothing but hinder an otherwise strong program.
8: Standardize Senior sems across subfields & instructors!
   - Students w/ different profs given very different senior sem exp
   - If senior sem is capstone of our Poli Sci education, it should be standardized
- Everyone should have research paper/presentation exp. Before senior sem
9:- More seminar style classes: Part Lecture, controlled discussion
   - I enjoy the discussion based classes but often I leave a class feeling as though I
     wasted my time because what the class chose to talk about had nothing to do with
     the reading/subject.
10: More research or big paper writing to make the senior seminar easier
11: Public speaking, more individual responses to current events
   → also, a greater emphasis on international news sources, bias in media.
12: Analysis outside of Judicial and more subjective outside of theory.
13: I feel as though perhaps not enough analytical papers were assigned.
14: - encourage more use of critical thought in classes other than theory-theory is not the
   only subfield where critical analysis could benefit the subject matter and understanding of
   the area.
   - Perhaps less segregation between the subfields would benefit students so that they
     have a better understanding of each other as well as the different subfields.
15:
16: TO SET UP A BETTER HAND-ON-JOB PROGRAM (INTERNSHIPS)
17: It would be nice if all the professors/courses were always here/offered. Every year that
   I’ve been here except my freshmen year they’ve had to reschedule classes and make them
   up. Ex. Substitute profs. not staying for a full year.

Area Two: Comfort with Participation in Government

4) I am more empowered to participate in political activities due to my increased
   familiarity with politics and government.

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Somewhat Agree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Strongly Disagree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>24%</td>
<td>53%</td>
<td>6%</td>
<td>18%</td>
</tr>
</tbody>
</table>

5) List and describe the things that the political science program did that best helped you
   to become more empowered to participate in political activities. If you wish, identify
   specific courses, professors, or learning activities that best helped you become more
   comfortable with political participation.

Responses from Respondent:
1: They have encouraged participations & answered any question about how to get
   involved.
2: *Sponsored events and engagement activities.
   *Discussion with professors outside of class.
3: *Empowered? Yes willing, excited, motivated? No*
   I’ve taken mostly behavior classes that focus on things other than areas that encourage
   participation (media, political psychology)
   +++Service learning project in Am. Gov. probably best at making me feel
   empowered/comfortable participating
4: Better educated me on the current political issues and helped to keep me informed on the salient issues.

5: Discussions in class showed me that I largely disagreed w/ most students on most things and so shoved me into activism!

7: Knowledge of the political institutions has helped me participate, because I know how they work

8: I don’t think Poli Sci helps on participate in Politics

9: I think the biggest thing the polisci department did was to not be intimidated by politics-the issues, Jargon, etc.

- Also in general just made me more interested (or angry) about politics which made me want to participate.

10: LEGISLATIVE PROCESS

VOTING BEHAVIOR

11: A strong concentration on statistical voter data can make a person feel small & hopeless, not to mention pessimistic & insignificant. The complete dominance of Money & patriarchal power comes through loud & clear in any in depth study.

Empowerment was really not a part of my poli sci experience

12: Judicial powers & constraints

Greg Thorson’s classes really helped.

13: Quite honestly, the more I’ve learned about the political system, the more estranged I’ve became. I’ve learned that the political system is a mess, the more I’ve understood how dysfunctional the system is, the less I’ve wanted to participate.

14: I am not interested in participating in political activities-I am interested in analyzing the political system & political theories.

- However, my classes other than Political theory that should have prepared me for political participation did do so to an extent. However, I did not see how they opened very many opportunities up to students to encourage them in political activity.

15: Diplomatic Negotiations

Simulations/Debates

research

16: I BELIEVE THAT MAKING ME A MORE INFORMED VOTER IS THE KEY HERE. THE KNOWLEDGE I GAINED THROUGHOUT ALL MY CLASSES WHETHER THEY ARE ON POLITICAL THEORY, INTERNATIONAL RELATION OR COMPARATIVE POLITICS, OR AMERICAN POLITICS.

17: American gov. interactive class projects

6) What additional things can the political science program do to further empower you to participate in politics?

Responses from Respondent:
1: More variety of internships readily available although I know this is difficult.

2: Discuss mainstream issues from an academic position (ie. Help me to truly understand and be able to articulate the roots and results of politics around me when I am sitting on a 'barstool/ in the real world.)
3: More focus on current events in all classes, as actual part of class instead of just recommended in syllabus.
4: Make students debate different issues in-class.
5: Perhaps offer credit (or something) for involvement in student political groups.
6: I probably learned more by my extra-curricular activities.
7: NA
8: - maybe some sort of civic engagement/service learning programs
9: - Current Events?
   - Con Law did a nice job making our study of the SC not seem like a history lesson but something ongoing & important due to talking about current SC cases & decisions.
10: More Practical Courses Instead of Intellectual Courses.
11: Lied to me.
12: More community interaction requirements. Learning about government in the town.
13: Lied about it. The American political system is a mess with little room for appreciable change.
14: - Offer more opportunities to students of political science - all students, not just students that go out of their way to ask for these opportunities.
15: Preparation for post UMM life.
16: 
17: A poli. sci. club might help. May sessions specific to politics.

Area Three: Preparation for Graduate and Professional School

7) I am adequately prepared for entrance into graduate or professional school.

<table>
<thead>
<tr>
<th>Strongly Agree (1)</th>
<th>Somewhat Agree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Strongly Disagree (4)</th>
</tr>
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<td>50%</td>
<td>25%</td>
<td>19%</td>
<td>6%</td>
</tr>
</tbody>
</table>

8) List and describe the things that the political science program did that best helped you to prepare for graduate or professional school. If you wish, identify specific courses, professors, or learning activities that best helped you prepare for graduate or professional school.

Responses from Respondent:
1: Prof. O’loughlin taught me how to do graduate level work & has assisted me in being able to attend Poli Sci conferences.
2: The program helped me to realize what a waste of time graduate school would be in political science.
3: 
4: 
5: Research, research, research! The senior sem, especially!
6: Written & oral communication skills. Everything from short responses to the long senior seminar paper and presentation have helped communication skills, especially when it comes to being concise.

7: Critical thinking & analysis skills

8: - Senior sem good idea, in theory
   - lots of research opportunities

9: - research papers
   - offer more courses
   - make it mandatory to take a course in each field

10: VOTING BEHAVIOR
    PAULA OLOUGHLIN

11: I don’t have a desire to go.

12: Prepared min the areas of theory, constitutional powers and constraints, and base understanding of politics.

13: It gave me a rigorous course load and a broad information base. Prof. Joo went a long way to give an interest in further education.

14: - My critical thinking skills were certainly expanded, and my ability to write research as well as book analyses.
   - William Hunt treated every course seriously and thus encourages students to think about how what they learn no will help them in graduate school

15: Nothing, really. I feel prepared to go to law school, But I am an I.R. students with no interest in being a lawyer

16: I THINK THAT ALL THE ACTIVITIES I WENT THROUGH DURING MY TIME AT UMM IN THE POLITICAL SCIENCE FIELD HAS HELPED ME TO BE PREPARED FOR GRADUATE EDUCATION, INCLUDING THIS SENIOR SEMINAR.

17: It made me aware of opportunities.

9) What additional things can the political science program do to further enhance your preparation for graduate or professional school?

Responses from Respondent:

1:--

2: The program could present to students a sense of worth for the field of political science and why some one should spend another $60-100,000 for more of the same.

3: Change the Senior Seminar procedure. In my experience it was ran too much as a group project and should be made to be more on an individual assignment w/ more one on one interaction. Should also be more detailed by subject area so students are working closer w/ the Prof. whose subject area they are examining, ie, Am govt, law, ideologies, etc.

5: Really focus on quantitative skill development.

6: One thing that would help would be a required research methods class. We basically ask American gov. people to do original research, but they may have never done statistical analysis (or did it freshman year), but a refresher or making it applicable to political science. And there are other things, like IRB forms or how to write a survey are also things that could be helpful.

7: More courses on Law, make the political theory courses more valuable
8: - Vastly improve the Senior Seminar
   - Standardization across sub-fields
   - Better Instruction
   - Presentations
      - Professors - stop getting in pissing matches
      - Professors - let students talk more - stop trying to make students look bad
9: - The senior seminar needs to be better organized & uniform throughout the discipline
10: MORE RESEARCH PAPERS LIKE THE SENIOR SEMS.
11: Prove it’s worth it?
12: LSAT prep course!!!
13: Hire someone with legal background to teach law courses and serve as a pre-law advisor. Greg is great, but a real attorney would be better.
14: - there needs to be more collective efforts by all Poli Sci faculty to raise student’s awareness of graduate school opportunities they might have.
15: More info on Diplomatic schools, etc.
16:
17: Maybe more research papers early on.

10) Please give your overall assessment of the political science program. What are its greatest strengths? What can be improved?

Responses from Respondent:
1: The program is good. I have a basic understanding in two other subfields of Poli Sci & a good level of knowledge in Am. Politics. A class on methods offered in the fall
2: The UMM Political Science program sucks, especially international relations, (or is it world politics - it really doesn’t matter). No where in the curriculum does there exist an opportunity to learn the art of diplomacy or negotiation, consider significant issues of the day (pr decade), or examination of unique ideas or solutions to global conflicts. You could, therefore, offer something practical.
3: Strengths: opportunities in types of research and diverse areas of study, lots of small discussion classes, generally safe for diverse opinions, respect between students & professors & students and other students, easy to specialize and take classes mostly in one’s specific area of interest
   Possible Improvements - Improve Sen. Sem by narrowing down sub fields into sub sub field before picking topics, more theory in all classes
4: There needs to be more political science classes offered that involve the study and preparation of law.
   Again, as mentioned before, there should be more classes that focus on political ideologies and what their values are, in order to engage in political discussion, one needs to have a good group as their core beliefs.
   Should offer more classes, or integrate into classes more analysis aspects and how to create formulas and data in the field of political science.
5: I found that classes varied widely in quality - some being incredibly academic, others being a waste of time. There is clearly a different set of standards for the faculty, and I wish everyone would have high standards!
6:
7: I think overall the poli sci program is a very solid program. I think the greatest strengths of the program are the critical thinking and analysis skills one receives. I believe that the senior seminar program needs to be completely reworked and redesigned. The political theory classes could offer more, as of right now the classes are taught by rather radical faculty member who only wants his views regurgitated back at him. Also, certain professors in the discipline obviously play favorites and it is very clear to the rest of the class. Regarding the senior seminar program, do not try to sell it as a team effort! If it were a team effort all members would be graded on a group project, this however is an individual effort. Furthermore requiring students to attend the talks given by their peers is simply stupid. Forcing students to take time out of their busy schedules to attends 3 hour session of the peers taking is unreasonable, especially when it is expected for a month. Also ________ if to student’s grades is wrong in my opinion because why does it matter if one shows up to peer presentation. One or two of these sessions might be reasonable but certainly not all of them. This is a strong program with great faculty and terrific courses, I just hate to see it bogged down by an ill-conceived and poorly implemented “capstone” program.

8:- Small classes
- Overall quality instructors

9: Strength - strong faculty
- Need to offer more courses &/or not have all courses (in each subfield) meet on the same day - very difficult scheduling
- Need to be prepared in classes to do senior seminar
- ie. I never had to do a presentation
  I never had a major research paper like the senior sem (i.e. had a Lit Review, methodology, etc)

10: The professors are willing to help students after hours and want them to succeed.

11: There should be a division between poli sci students with emphasis on statistics/behaviors & those with a greater interest on theory/movements. The current theory/American /IR comp. are not different enough. A Great deal of my dissatisfaction with the major deals with the time I was forced to spend on statistics of party politics or voting when my particular interest would have been better served by personal analysis of bigger issues.

Why are stats a totally legit explanation for political understanding?

12: Good concepts and skills taught, but to prepare students for law school, more could be done.

13: It tends to have a strong quantitative bent. I wish it had a larger faculty to better offer a wider range of courses. I wish we had a competitive political scientist and legal expert.

14: Overall, the Political Science program is disjointed, with little communication and with little respect between the professors, which I believe rubs off on students. They need to encourage students to have respect for one another’s subfields as important areas in Political Science altogether, and encourage students to explore all different areas of Political subfields instead of sticking to only their own area. This narrow view seems detrimental to student’s understanding of the discipline of Poli Sci overall.

15: I’ve learned a lot, expanded my knowledge Base. Need more preparation for post UMM life => school => employment
16: I BELIEVE THAT IF THE PROGRAM WOULD GIVE A MORE SPECIFIC GUIDE LINE FOR THE SENIOR SEMINAR (EVALUATION STYLE AS A STANDARD) WOULD MAKE IT MORE TIME EFFICIENT FOR STUDENTS.
17: -more consistency within the senior sems.
    -more consistency in classes offered.
    -I do think it’s easy for students to find their niche in the political science division
    -Professors are overall approachable.

Thank you for your feedback. Your responses will be used to shape the future direction of our program!
Psychology

Discussion and Description
Discipline goals, direct measures, and improved student learning

1. Psychology discipline goals are
   - awareness of the range of knowledge in psychology
   - competency in translating behavioral questions into the terms of scientific inquiry
   - competency in reading and critically synthesizing the technical literature in psychology
   - competency in quantifying and statistically analyzing behavior
   - awareness of ethical issues in psychology.

2. Restructuring of the major requirements

   By monitoring advisee's class choices since conversion to semesters certain deficiencies became apparent. Although psychology's offerings covered the core areas of the field, and although the basic structure of the major remained consistent with what was once offered under a calendar based on quarters, we were finding that students were taking a narrower selection of upper-level courses. Through comparisons with peer college's psychology programs we confirmed that (1) our major required comparatively fewer course requirements and (2) we offered markedly greater flexibility in what students may take rather than specifying credits to be taken within specific areas of the field. We responded to this by first increasing the number of credits required for the upper-level electives from 16 to 20 credits. After monitoring that change for a year we found that a more thorough evaluation and reorganization of the major was in order.

   Over the course of several lengthy discipline meetings we reviewed the 2002 report by the American Psychological Association's Task Force on Undergraduate Psychology Major Competencies, comparison college's catalogs, and our own goals and objectives. We found that the goals and objectives stated for our students were consistent with those set forward by the APA task force, but that students could complete the existing program and not meet all of them. Specifically, students could complete the undergraduate psychology major by only completing upper-level courses within a couple core areas of the field, thus specializing knowledge prematurely.

   Our solution was to start from scratch, armed with the information gained. By matching our objectives, faculty expertise, and credit requirements we restructured the major, keeping the number of required credits at 42 while assuring students will receive upper-level background across core areas of psychology. Students will now take at least one course from each core category: Learning and Cognition; Biological and Comparative; Personality and Clinical; Developmental; and Social and Applied psychology. Students still have some flexibility, choosing among 3 to 6 courses.
within any one category, and the ability to take additional courses from any category
to meet the credit total.

A second major change as a result of our evaluation was a revision of our existing
capstone requirement, the Empirical Investigations (EI) courses. As noted in
previous assessment summaries, the EI was an effective evaluation and capstone tool.
However, even after reconfiguring it into a 2-semester sequence, the EI had become
too onerous a task with too many students failing to complete it in the time allotted.
Research experience is vitally important for students who are capable and motivated
to pursue doctoral study in psychology. However, many students do not meet those
needs or goals. The result in those cases was a tremendous amount of “hand-
holding,” leaving the capstone purpose in some doubt. Again, by consulting our
goals and resources, we developed a new capstone requirement. The senior seminar
course is intended to serve as a capstone experience for psychology majors, which
means that its purpose is to both unify and provide a broader context for knowledge
about the field of psychology gained throughout the undergraduate years. To
accomplish this, students will:

1. Demonstrate their ability to read and critically synthesize primary source
material;
2. Add to the collective knowledge and understanding of the seminar class
members through preparation and active participation;
3. Investigate a topic within the broad topic of “addictive behaviors” in depth;
4. Lead a seminar discussion focused on your chosen topic;
5. Communicate your findings in an extensive written report and public
presentation.

For the seminar, course expectations and grading guidelines were developed as a
discipline, but each section will be structured by individual faculty. Seminar students
and all psychology faculty will be expected to attend the public presentations,
allowing assessment across the discipline. Faculty will meet at the end of the
academic year to evaluate the seminars. This type of capstone experience is also
more in-line with other majors at UMM.

As noted, research experience is vitally important for students. One challenge will be
for the psychology discipline to maintain the level of research opportunity with the
required research experience removed from the major. Our intent is that quality and
focus of research will improve with the removal of projects conducted just for the
sake of getting them done. This will take extra effort on the part of faculty to
encourage students to do research and our success at adequately meeting students’
needs in this area will need to be assessed. One marker will be any change in the
number of students engaged in UROP, REU, or other research experiences and
another will be student participation in national and regional conferences.

3. Course embedded assessments
Over the past several years, one of the psychology faculty, in conjunction with
director of UMM’s Academic Assistance office, has systematically evaluated student
studying skills and performance in the introductory psychology course. By identifying differences between successful and less successful students' approaches to readings and course materials, they have developed an electronic guide for studying for introductory survey courses and the findings are now used as part of course instruction in the introductory psychology course. Further, the research has helped inform and develop programs now in place at the Academic Assistance office.

Sociology

Discussion and Description

Discipline goals, direct measures, and improved student learning

1. sociology discipline goals
The sociology curriculum (along with support from anthropology courses) is designed to acquaint students with the concerns, theories, and methods of the science that focuses on groups, culture, and interpersonal relationships of human beings. In addition to an introduction to sociology as a science, an effort is made to relate human values to the theories, methods, and data of sociology. Courses are designed to meet the needs of liberal arts students and those preparing for graduate school.

2. sociology senior seminar
The senior seminar is the principal assessment vehicle in the sociology discipline. Each student majoring in sociology enrolls in Sociology 4991 (5-credits) in the spring of their graduating year and works under the guidance of a faculty advisor (Jennifer Rothchild, who teaches the capstone course) to produce a piece of individual research. Sociology 4991 represents the culminating course in the sociology program. Students are expected to use their sociological imaginations to identify a sociological issue and to research it thoroughly. Projects involve primary research in sociology as well as thorough library research, including scholarly journal sources. Two types of projects are possible: (1) projects involving data analysis or (2) theoretical projects.

Projects involving data analysis begin with a research problem that can be systematically addressed through a variety of methodological techniques, including participant observation, content analysis, mail survey, interviews, etc. Most of these techniques involve human subjects and necessitate the permission of the University of Minnesota Human Subjects Committee. Students opting to design and conduct a project involving human subjects must complete an IRB application and receive approval from the University of Minnesota IRB before proceeding with the project (in the past, Jennifer has insisted that students complete the IRB portion of their research in the semester preceding enrollment in the capstone course).

Theoretical projects define a problem in sociological theory and seek a solution to it through careful reading and analysis of primary and secondary sources. Such projects are to be documented by at least 30 different sources. Theoretical projects are only

1 See Appendix A.
undertaken by students who are able to describe not only what has already been done, but also to add new persuasive insight into a theoretical issue.

The research product is a 30-page paper and a 25-minute public presentation.

Over the course of the semester, Jennifer works closely with each student to develop her/his presentation and final paper. Students and advisor meet as a class and one-on-one throughout the semester. Prior to the presentation, Jennifer reads near-final drafts of all of the papers, meets with each student to critique and encourage their work and to offer suggestions for the presentation and paper.

Jennifer assigns the final grade, but she would like for her discipline to become similar to other disciplines, in which the entire discipline faculty meets to discuss the presentations and to ensure consistency in grading.

At present, students receive feedback through one vehicle: the advisor’s evaluation of the paper and presentation. Last year, Jennifer distributed evaluation sheets to be filled out by audience members at the presentation, but these were strictly qualitative evaluations. In the future, Jennifer would like to provide more detailed and quantitative evaluation sheets to audience members, which will then provide both numerical ratings (quantitative data) and evaluative comments (qualitative data). While the students and Jennifer invite other social science faculty members to the presentations each year, only Professors Julie Pelletier (Anthropology) and Christopher Butler (Sociology & English) have attended. Feedback from all the sociology and anthropology faculty members would be a tremendous asset to assessing the capstone course projects accurately and effectively.

Jennifer also hopes that in the future the sociology faculty can plan to meet at the end of the academic year to evaluate the most recent round of papers and presentations. This would be a touchstone for improved student learning.

For the 2006-2007 year, Jennifer reports, “All students showed growth in sociological understanding and critical thinking by the end of their senior seminar experience. Overall, I feel that this was a very successful year of senior seminar.”

Over the years (both on student evaluations and in-person/through informal comments), students have reported frustration in trying to complete a substantial research project in just one semester. Based on the assessments, Jennifer pushed for and was successful in making the seminar a two-semester (year-long) course, starting in the fall of 2007: Soc 4901 (1-credit) in the fall and Soc 4902 (3-credits) in the spring.

3. course-embedded assessment

JIM: I am not sure what Solomon and Farah have to say about this category, but I have implemented a pre-test and post-test in three of my courses. Please see the numerical data attached as Appendices B-D.
4. course planning

JIM: It is my hope that my sociology and anthropology colleagues and I will meet during the 2007-2008 year to discuss our introductory courses with an eye to increasing their number and variety for both majors and non-majors.

general education categories spanned by the discipline
Sociology courses bear the symbols of “SS,” “HDiv,” or “IP.” Two courses are designated as “Envt” courses: Soc 3204 (Culture, Food, and Agriculture) and Soc 3131 (World Population). My Sociology of Deviance course (Soc 3141) is designated as “E/CR.”

Appendix A
Sociology 4991
Independent Project Seminar syllabus
(sociology major capstone course)

sociology 4991
independent project seminar
spring 2007

Tuesdays and Thursdays: 4-5:40 p.m.
Room 217, Imholte Hall

instructor: Dr. Jennifer Rothchild
e-mail: jrothch@morris.umn.edu
phone: 320.589.6279
office: 116A Imholte
social science division office: the main floor of the Camden Building
division office phone: 320 589 6200
office hours: Mondays and Wednesdays, 2:30-3:30pm; Tuesdays, 1-2pm

This course is a capstone for the sociology major and is designed to elicit a synthesis of all you have learned in your sociology courses. Producing an individual research project will be the primary goal of this seminar, from generating an original research idea to carrying out that research and reporting it according to sociological precepts you have already learned. Mastering the craft of scholarship is essential to actualizing your academic capabilities and will hone your professional skills for a variety of work interests.

objectives:
The main objectives of the course are:

(1) to introduce the nature, uses, and objectives of research by turning an interest or idea into research questions and even problem solutions;

(2) to construct an argument by taking claims and qualifying them appropriately;
to think about and evaluate sources with a visionary and critical (yet constructive) mind;
(4) to discuss the complexities of planning, organizing, and writing a research paper;
(5) to understand the ethical issues and problems in the research and writing process;
and
(6) to learn how to communicate research effectively and efficiently.

course requirements:
prerequisites:
This course is one of the required courses needed to complete the sociology major. It is recommended but not required for a minor in sociology. Prerequisites for this course are Sociology 3101 (Research Methodology I) OR Sociology 3102 (RM II) AND Sociology 3401 (Classical Sociological Theory) OR Sociology 3402 (Contemporary Sociological Theory). Please see me if you have enrolled in Sociology 4991 and have not yet met the prerequisites for this course.

Appendix B
Sociology of Deviance (Soc 3141)
pre-tests and post-tests

sociology of deviance (Soc 3141) pre-test and post-test results

For the past two years, I have asked students to answer the attached reflection questions on both the first day of class and on the last day of the semester. I am particularly interested in how their answers to the following questions change over the course of the semester: “How do you define ‘deviance’?” and “Who decides what is ‘normal’?”

The results for fall 2005:
Nine students’ answers remained the same on the pre-test and post-test. Fourteen students showed improvement in their understanding of the socially constructed concepts of “deviance” and “normal.”

The results for fall 2006:
Four students’ answers remained the same on the pre-test and post-test. Fifteen students showed improvement in their understanding of the socially constructed concepts of “deviance” and “normal.”

Appendix C
Sociology of Gender (Soc 3121)
pre-tests and post-tests

sociology of gender (Soc 3121) pre-test and post-test results
For the past two years, I have asked students to define and describe the terms on the attached sheet on both the first day of class and on the last day of the semester. I am particularly interested in how their understanding of these terms changed over the course of the semester.

The results for fall 2005:
Four students' answers stayed the same from the pre-test to the post-test. Seventeen students showed improvement in their understanding of these terms, which I assert are critical to the sociological study of gender.

The results for fall 2006:
Two students' answers stayed the same from the pre-test to the post-test. Eighteen students showed improvement in their understanding of these terms, which I assert are critical to the sociological study of gender.

Appendix D
Introduction to Sociology (Soc 1101)
pre-tests and post-tests

Introduction to Sociology (Soc 1101) pre-test and post-test results

I have asked students to define and describe the terms on the attached sheet on both the first day of class and on the last day of the semester. I am particularly interested in how their understanding of these terms changed over the course of the semester.

The results for spring 2005:
(I had my teaching assistant compile the results.)
pre-test data:
-Average # of problems incorrect: 11.1194
-number of participants: 67
-maximum number incorrect: 17
-minimum number incorrect: 5
post-test data:
-avg. # of problems incorrect: 5.7
-number of participants: 62
-maximum number incorrect: 17
-minimum number incorrect: 2

My teaching assistant’s comments:
“The data show a large margin of improvement on average; however, some students were still struggling with basic concepts at the closing of the semester. It is difficult to tell if the few poor scores on the post-test were due to neglect, considering that their taking this test did not affect their final grades. In my opinion, students showed fair understanding of key terminology. It was a little alarming that students were still having difficulty with concepts such as ‘structural functionalism’ and ‘debunking,’ considering that they are both central concepts in the introduction course. Perhaps more time should be focused on highlighting the differences between sociological paradigms.”
Qualitative results for summer 2005:

My teaching assistant’s comments:

• “Students were able to define more terms on the post-tests.”
• “Terms were defined more completely on the post-tests.”

The results for spring 2006:

Ten students’ answers stayed approximately the same from the pre-test to the post-test. Forty-three students showed improvement in their understanding of these terms, particularly important concepts such as “social institution” and “personal troubles,” the latter being critical to their understanding of a major sociological tenet—sociological imagination.

Spanish

An Experiment to Increase Listening Skill
In Beginning Language II Courses

Introduction:

The foreign language staff in French, German, and Spanish is using the Iowa Placement Exam to place students in sections of beginning languages. Anecdotally we have heard that the listening part of this exam has been most difficult for students (in Spanish, for instance, the listening section consists of 12 questions based on number of separate listening passages). Students on average rarely complete more that half of these questions correctly.

Proposal:

During the 2006-2007 academic year we proposed introducing eight weekly sessions (week 7 through week 15) employing listening passages on CD’s, each passage played twice, along with oral questioning to help improve the listening skill. The experiment was conducted in the Spanish discipline where there were larger numbers of students available. Instructors tested the students in the Beginning Spanish II courses at the end of the Fall semester as a base comparison group, introduced the CD sessions in the Spring and tested Spring Beginning Spanish II sections at the end of the Spring semester (it should be noted that these were two different groups of students).

Results:
The mean score for the Fall group on the 12 listening questions (Iowa test) was 6.96 and the mean score in the Spring was 6.51, so it can be concluded that the eight weekly sessions were not enough to raised the level of the listening skill satisfactorily (see discussion for important observations).

Discussion

One explanation for the minimal change in listening skill may have been that in the Fall 83.3% of enrollment were first year students who were much closer to their high school Spanish. In the Spring 49.3% were first year students, some of whom came from Beginning Spanish I, some of whom were placed there directly from high school (without taking Beginning Spanish I at UMM, thus farther away from training than the Fall group). Also, significantly, 25.3% of the Spring group were juniors or seniors who were even more distant from their high school Spanish. Other possible factors: (1) different instructors in Fall and Spring, (2) different basic high school preparations (although in a random sample this might even out), (3) a different psychology at the end of Spring from the end of Fall (students worn out, not trying as hard), (4) the test itself not discriminating enough (e.g. it might have included more questions; in favor of the test is that it is an accepted objective test, although not precisely for listening). It is probable that the use of the CD was helpful after all, since an even greater Fall in the mean might have been expected, given the observations above.

Decisions:

1. We will redo the experiment next Spring (2008) in Beginning Spanish II and compare the results at that time with the results of this Spring (2007), comparing similar preparations.
2. We will double the time with the CD to 15 sessions, one each week of the Semester.

Conclusions:

We feel that the experiment was somewhat flawed because of the differences in the two groups tested this past academic year. However, we also feel that the CDs helped and that the Spring group might have slipped in ability even farther had the CDs not been used. The newly proposed idea of doubling the sessions and comparing groups which are more similar should yield more satisfactory results.

Submitted by:
Speech Communication Discipline Report for the ASL Committee (Spring 2007)

The Speech Communication Discipline (SPCH) has been divided into three areas, according to the classes taught by the existing instructors: (I) Rhetorical Studies, (II) Communication Studies, and (III) Media Studies and Technology. Therefore, for Learning Objectives #1 and #2, this report will be divided into three parts accordingly; each part will provide the results of their students’ learning assessments and its own recommendations. In a part IV, Learning Objective #3 will be assessed for the first time ever by the discipline.

The assignments assessed in this task were drawn from upper level classes in the major. The scale of five was generally practiced (5= excellent, and 0= fail). Please keep in mind that each area may have their own difference in assessment details because of the nature of each area, but they have come up with the results and recommendations that will help determine the directions of the areas and the discipline as a whole. The data in this assessment report are the written assignments, as available, done by the students in the major who graduated in spring 2007. (Throughout the major, students are asked to create personal portfolios, which are evaluated collectively during the senior year.)

I. Rhetorical Studies

Because there are two faculty members in this area, there will be two sections in this area: (1) Prof. Mary Elizabeth Bezanson’s assessment and (2) Prof. Neil Leroux’s assessment. The details are below.

(A) Learning Objective #1: Prof. Mary Elizabeth Bezanson’s Assessment
Prof. Mary Elizabeth Bezanson is the one who did this assessment, based on Learning Objectives #1 (Students will develop an historical and theoretical understanding of rhetoric). The details of this assessment can be described below.

Learning Objective/Expected Outcome
In this assessment, two expected outcomes of Learning Objectives #1 were addressed: (1) students will be able to compare and evaluate various theoretical approaches, and (2) students will demonstrate a sensitivity to the historical dimensions of theory building.

Data and Criteria for Assessing
Data are normally drawn from student papers in SPCH 3101 History of Rhetoric from the Classical to Modern Periods and reviewed. The criteria for this assessment included: (1) ability to cite sources, (2) ability to paraphrase the messages from the sources, and (3) ability to recognize the describe links between rhetorical theory and historical context.

Due to an inadequate number of student papers recovered from this course, no
assessment results are available this year.

(B) Learning Objective #2: Prof. Neil Leroux’s Assessment
Prof. Neil Leroux is the one who did this assessment, based on Learning Objective #2 (“The students will use a variety of assigned theoretical approaches appropriate to...rhetoric...to describe and evaluate assigned or chosen discourse.”). The details of his assessment can be described below.

Learning Objective/Expected Outcome
In this assessment, the expected outcome of Learning Objective #2 was addressed: “The students will be able to choose from a variety of methods to describe and evaluate a specific act or artifact.”

Data and Criteria for Assessing
Seven papers—Four from SPCH 4201 (Persuasion: Receiver Analysis), two from SPCH 3211 (Public Address), and one from SPCH 3111 (Contemporary Rhetoric)—were assessed on three criteria: (1) ability to cite sources, (2) ability to paraphrase the message from the sources, and (3) ability to analyze the discourse.

Results
The results were given according to the types of criteria. The details are given below:
(1) Ability to cite sources—students averaged 4.5 of 5.0.
(2) Ability to paraphrase the message from the sources—students averaged 4.6 of 5.0
(3) Ability to analyze the discourse—students averaged 4.6 of 5.0.

<table>
<thead>
<tr>
<th></th>
<th>Citing</th>
<th>Paraphrasing</th>
<th>Analyzing</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Papers</td>
<td>4.5</td>
<td>4.6</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Recommendations
For program adjustments, an additional writing step in two courses that have discourse analysis assignments is desirable, whereby revisions of the previous draft are required. Also, writing problems will be handled, but the instructor will not “fix” the problems. Rather, students themselves are required to figure out how to fix them with assistance from the instructor.

Remarks: None

II. Communication Studies

Prof. Penny Schmidgall is the one who did this assessment. The details of this assessment can be described below.
**Learning Objective/Expected Outcome**

In this assessment, two learning objectives and their expected outcomes were addressed:

<table>
<thead>
<tr>
<th>Objective #1</th>
<th>Expected Outcomes</th>
</tr>
</thead>
</table>
| Students will develop an historical and theoretical understanding of...communications.... | (1) Students will be able to compare and evaluate various theoretical approaches.  
| (2) Students will demonstrate a sensitivity to the historical dimensions of theory building. |

<table>
<thead>
<tr>
<th>Objective #2</th>
<th>Expected Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students will use a variety of assigned theoretical approaches appropriate to...communications...to describe and evaluate assigned or chosen discourse.</td>
<td>(1) The students will be able to choose from a variety of methods [italics added] to describe and evaluate a specific act or artifact.</td>
</tr>
</tbody>
</table>

In general, the students are expected to be able to “compare, evaluate, and choose a variety of concepts, theories, and methods; to describe and evaluate a specific act(s) or artifact(s); and to assess their work’s quality.”

**Data and Criteria for Assessing**

Final papers from two courses in 2004, 2005 and 2006 were reviewed: (1) SPCH 3401 (Human Communication Theory—major core course) and (3) SPCH 3421 (Organizational Communication). The number of papers used in this assessment varied because of the availability. Data described in this study reflects the work of the “class of 2007.” Also, the number of criteria in this 2007 study has been the same to fit all three courses’ assignment characteristics; the list of the criteria is below:

1. Ability to cite sources
2. Ability to paraphrase the messages from the sources
3. Ability to classify, clarify, and assess/criticize any relevant concepts, perspectives and/or theories
4. Ability to (a) identify and summarize research methods used in sources and/or (b) select and apply research methods used in their own work
5. Ability to (a) describe/evaluate a specific act, discourse or artifact and/or (b) assess their own work (e.g., the implications of their works/studies)
The results were given according to the types of criteria. The details of the student average (scale of 5) are given below:

Results

<table>
<thead>
<tr>
<th></th>
<th>Citing Sources</th>
<th>Paraphrasing</th>
<th>Concept/ Theory</th>
<th>Method</th>
<th>Analysis/ Assessment</th>
<th>Class 2007 Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{SPCH 3401} (4 papers)</td>
<td>4.25</td>
<td>4.25</td>
<td>4.75</td>
<td>4.75</td>
<td>4.50</td>
<td>4.50</td>
</tr>
<tr>
<td>\textit{SPCH 3421} (2 papers)</td>
<td>4.50</td>
<td>4.50</td>
<td>4.00</td>
<td>4.50</td>
<td>3.5</td>
<td>4.20</td>
</tr>
</tbody>
</table>

Overall = 4.35

Recommendations

For program adjustments in this area, there still are three recommendations:

(1) A college writing for “research paper” class is required to all majors. (This is a response to “Citing Sources” and “Paraphrasing.”)

(2) For SPCH 3401 (as the first upper-level communication studies and core course taken by most new majors), the alert system must be monitored, while the criteria for accepting the new majors should be considered (e.g., a “B” in SPCH 2101 and a G.P.A of 2.5 in their first college year or 30 credit hours).

(3) Be sure that the majors keep their works and submit them when this assessment is administered.

Remarks
(1) Because the basic knowledge in research methods was introduced in fall 2003, the assessment on this was administered in both courses. Students in SPCH 3401 were introduced to research methodology.

(2) For SPCH 3401, four papers were assessed. This course generally is the first upper-level communication studies core course most majors take, therefore, they struggle hard for adjustment. When compared with last year (2006), students in this year (2007) class showed better performance with regard to concept/theory (2006-4.56 to 2007-4.75) and method (2006-4.62 2007-4.75).

(3) For SPCH 3421, two papers were assessed. This year (2007) reflected a drop in the performance score from last year (2006) (2006—4.50 Vs. 2007—4.20). This is perhaps a greater reflection on the number of papers evaluated (2007-2, 2006-6) then on an overall decline in student performance.

### III. Media Studies and Technology

Prof. Barbara Burke is the one who normally does this assessment. Because she was on sabbatical this year, no assessment in this area of courses, regarding Learning Objective #2 was addressed: “The students will use a variety of assigned theoretical approaches appropriate to…electronic mass media to describe and evaluate assigned or chosen discourse.” The expected outcome was stated by our assessment documents as: “The students will be able to choose from a variety of methods to describe and evaluate a specific act or artifact.”

### IV. Speech Communication Senior Seminar Presentations

**Learning Objective #3**

Professor Mary Elizabeth Bezanson completed the assessment based on this objective using data provided by the three 2006-2007 faculty in Speech Communication: “The student will participate in a variety of oral communication assignments using informative and persuasive speaking techniques effectively.”

**Learning Objective/Expected Outcome**

In this assessment, the expected outcome of learning Objective #3 was addressed. “The students will be able to design and deliver effective messages through the oral communication channel.”

**Data and Criteria for Assessing**

Using the speaking evaluation mechanism employed for the Senior Seminar presentations aggregate scores were achieved for each of the ten evaluative criteria for each student. A total score was then generated for the assessed group.

The following were the assessed criteria:
Criteria 1. To what extent did the speaker provide an attention getting intro.?
Criteria 2. To what extent did the speaker provide a functioning preview?
Criteria 3. To what extend was the presentation grounded in theory and/or available literature?
Criteria 4. To what extent was the thesis supported by effective reasons?
Criteria 5. To what extent were the reasons supported by evidence?
Criteria 6. To what extent did the speaker present new findings or insights?
Criteria 7. To what extent was the presentation extemporaneous?
Criteria 8. To what extent was the presentation effectively timed?
Criteria 9. To what extent did the speaker maintain effective eye contact and vocal variety?
Criteria 10. To what extent did the speaker appear knowledgeable about the subject?

Point values were assigned on the following scale:

<table>
<thead>
<tr>
<th>Score</th>
<th>Poor</th>
<th>Fair</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.5</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>3</td>
<td>3.5</td>
<td>4</td>
<td>4.5</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>6</td>
<td>6.5</td>
<td>7</td>
<td>7.5</td>
<td>8</td>
<td>8.5</td>
</tr>
</tbody>
</table>

The following table indicates the results of the assessment:

<table>
<thead>
<tr>
<th>Criteria Studenta</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.33</td>
<td>3.66</td>
<td>3.33</td>
<td>3.5</td>
<td>4</td>
<td>3.83</td>
<td>3.83</td>
<td>2.16</td>
<td>3.46</td>
</tr>
<tr>
<td>2</td>
<td>3.83</td>
<td>3.66</td>
<td>1.3</td>
<td>4</td>
<td>3.5</td>
<td>4</td>
<td>4</td>
<td>1.5</td>
<td>3.22</td>
</tr>
<tr>
<td>3</td>
<td>2.33</td>
<td>4</td>
<td>3.33</td>
<td>4</td>
<td>3.16</td>
<td>4</td>
<td>3.5</td>
<td>2.5</td>
<td>3.35</td>
</tr>
<tr>
<td>4</td>
<td>3.5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3.16</td>
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<td>2.8</td>
<td>3.68</td>
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<td>5</td>
<td>3.83</td>
<td>4</td>
<td>2.66</td>
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<td>2.83</td>
<td>3.83</td>
<td>4</td>
<td>2.8</td>
<td>3.49</td>
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<tr>
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<td>3.16</td>
<td>3.86</td>
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<td>3.83</td>
<td>3.85</td>
</tr>
<tr>
<td>8</td>
<td>3.5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3.16</td>
<td>3.66</td>
<td>3.66</td>
<td>3.2</td>
<td>3.65</td>
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<td>9</td>
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<td>3.33</td>
<td>3.83</td>
<td>3.66</td>
<td>3.8</td>
<td>3.70</td>
</tr>
<tr>
<td>10</td>
<td>3.66</td>
<td>4</td>
<td>3.83</td>
<td>4</td>
<td>3.83</td>
<td>4</td>
<td>2.8</td>
<td>3.77</td>
<td></td>
</tr>
</tbody>
</table>

Response: While individual students struggled in some categories, and some very low scores may have affected the overall average, the results do indicate that in the aggregate students in Speech Communication meet Learning Objective #3. This group was especially strong on criteria #7, speaking extemporaneously, criteria #10, knowledge of the subject, and criteria #4, effective reasoning.

The discipline will work to improve scores on criteria #2, providing an effective preview, and in criteria #6, presentation of new findings.
This is the first year in which this Learning Objective was assessed. With more data the discipline will move forward to make even more substantive changes in the discipline. For now, our advances may be more modest.
ASSESSMENT OF
STUDENT LEARNING:
STATISTICS DISCIPLINE

PREPARED BY:
ENGIN SUNGUR, PROFESSOR OF STATISTICS
JON ANDERSON, PROFESSOR OF STATISTICS
JONG-MIN KIM, ASSOCIATE PROFESSOR OF STATISTICS
BENJAMIN WINCHESTER, INSTRUCTOR
JAMES GAMBRELL ’07, STUDENT

SPRING 2007
Phase I.

UNIT MISSION/GOAL(S)

Please state your unit’s mission/goal(s):

To advance the knowledge of statistics: by teaching statistics and processes, by research in statistics and statistical pedagogy, and by dissemination of this knowledge to our students and the community we serve.

Please describe how your unit mission/goal(s) relate to the institutional mission

The study of statistics is central to the liberal arts education. The statistics curriculum serves as an integral part of students’ active pursuit of liberal arts education. The discipline’s mission concentrates on the three main components of the institutional mission, namely, teaching, research, and outreach. The statistics curriculum is currently serving students who major/minor in Statistics, major/minor in disciplines which requires a statistical background, aim to complete pre-professional programs, and the whole Campus through its general education courses in mathematical/symbolic reasoning. The discipline’s mission also involves dissemination of statistical knowledge to the community which supports the institution’s mission “(UMM) is an educational resource and cultural center for citizens of west central Minnesota (and it has) strong sense of community”. The discipline aims to be a leader in statistics education at the undergraduate level in a liberal arts environment. Under this objective, the discipline created a model curriculum which is given in the following figure. The discipline also has a goal of being a leader in the field on service learning/civic engagement and technology enhanced learning.

Figure 1. Statistics Curriculum
### Assessment Areas in General

Based on the discipline’s goals and objectives, assessment of student learning has been carried out in the following areas:

1. **General Education**: This consists of statistics service courses/introductory level courses.
2. **Statistics Major/Minor**: Basic component is the curriculum for majors/minors.
3. **Liberal Arts Statistical Support System**: Curriculum and statistical research support for students outside the statistics discipline
4. **Special Areas**
   - IV.A. Service learning/civic engagement
   - IV.B. Technology enhanced learning

### Student Learning Objectives/Expected Outcomes

<table>
<thead>
<tr>
<th>Learning Objective 1.</th>
<th>Expected Outcome 1.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will gain the basic knowledge and skills to make statistical contributions to modern society, whether in the form of pure statistics or statistics applied to the other disciplines.</td>
<td>Demonstrated basic knowledge of calculus, analysis, algebra, probability, statistics, and ability to describe these areas of statistics and see importance of this in their statistics education. (A detailed learning objectives and expected outcomes for these topics are prepared and updated regularly during the implementation of the assessment process.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Objective 2.</th>
<th>Expected Outcome 2.</th>
</tr>
</thead>
</table>
| Students will sharpen their statistical intuition and abstract reasoning as well as their reasoning from numeric data. | • Demonstrated ability to model and solve real-world problems, formulate a problem statistically, and determine an appropriate approach towards its solution.  
• Demonstrated ability to write, read and construct proofs of key results in various courses taken. |

<table>
<thead>
<tr>
<th>Learning Objective 3.</th>
<th>Expected Outcome 3.</th>
</tr>
</thead>
</table>
| Statistics and statistics curriculum will enhance students’ critical thinking in domains involving judgments based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook. | • Demonstrated ability on how to deal with theoretical and applied statistical problems whose solutions do not fit exactly into any existing statistical knowledge. For instance, the student should try to embellish it or solve some special cases.  
• Demonstrated ability to interpret results of a statistical |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The curriculum will prepare students to enter graduate school, and pursue careers in applied statistics.</td>
<td>Students should be able to document and prove their statistics background to get a job or admission to graduate schools. Also, they should be able to meet the requirements for professions such as actuarial science. Program should help students to build a resume through a continuous and effective advising.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Objective 5.</th>
<th>Expected Outcome 5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students will be able to see and communicate statistical ideas/results effectively and identify potential pitfalls of any statistical analysis.</td>
<td>Demonstrated ability to describe and explain a theorem, statistical formula/model, and a result of a statistical analysis in broad terms to a non-specialist audience.</td>
</tr>
</tbody>
</table>
I. GENERAL EDUCATION: Statistics Service Courses/Introductory Level Courses

- **LEARNING CHECKS:** Thirty learning checks are designed covering all the key concepts in statistics. Target group is all students taken the first course in statistics (Stat. 1601 “Introduction to Statistics” and Stat. 2601 “Statistical Methods”). The students' performances on these checks are not graded, but all of the students are required to take them. This assessment tool may be viewed at [http://www.morris.umn.edu/~sungurea/introstat/assessment1601/assessment1601.html](http://www.morris.umn.edu/~sungurea/introstat/assessment1601/assessment1601.html).
  
  Learning checks are designed to pinpoint the key concepts/issues and common mistakes.
  
  Starting year of implementation: 1997
  Implementation frequency: Every semester, all first courses in statistics
  Size of database as of Spring 2007: 3,986
  Type of assessment: Cognitive; direct conceptual

- **RETENTION OF STUDENT LEARNING STUDY:**
  
  This investigation aims to measure the amount of information and the types of skills students retain from their introductory statistics courses. The study primarily tests the hypothesis related to the post and present performance of the students. Furthermore, it is hypothesized that knowledge retention will be highest for recognition tasks and lowest for problem-solving tasks. Additional hypotheses are developed based on (i) the instructional strategies employed, and (ii) other individual differences between students such as major, interest, prior knowledge of statistics, etc.

  Students who completed the course in the past are retested with a new version of the comprehensive final exam from the class they took. The new form of the exam asks all the same questions with only minor changes, and it are graded in the same manner as the original. Students also complete a detailed questionnaire that includes background information on other variables such as gender, major, prior knowledge of statistics, interim exposure to statistics, etc. The students are asked not to do any special studying of statistics prior to the new test.

  Since, only 20 students per comparison group are needed to obtain statistical power above .80 for basic statistical tests under fairly conservative assumptions (mean difference of >.75 SD), 50 students are randomly selected from the pool.

  The study aims to compute a “relative loss” estimate, which will serve as the dependent variable. However, because some students have taken the class the previous semester, while others may have taken it as long ago as five or six years the hypothesized relative loss rates for different groups of students must be stated as a function of time. Specifically, average relative loss rates are hypothesized to fit non-linear, non-decreasing functions of time elapsed since the course was taken (Semb, 1994). The exact shape of the hypothesized functions will be worked out in detail during the literature review, but based on an initial review of studies of both retention in mathematical subjects and basic theories of forgetting they are expected to be negative exponentials of the form:

  \[
  L = A - Ae^{-T/R}
  \]

  where \( L \) is relative loss, \( T \) is time, \( A \) is the asymptotic relative loss (relative loss after an infinite period of time), and \( R \) describes how quickly \( L \) approaches \( A \). Different values for these parameters will be hypothesized for each group of student (such as A-students, B-students, etc.) prior to data collection. Also, once parameter estimates are obtained from the sample, this function will be used to transform scores to correct for time when performing t-tests.

  This study provides a valuable addition to research on retention for several reasons. First, statistics is a relatively new and small field of instruction and research on retention of statistics-area information is sparse. Second, introductory courses in statistics are required for students in a number of majors at UMM. This provides a population of students whose statistical knowledge is mostly a result of introductory statistics courses offered at UMM. Third, statistics is a relatively straightforward content area to test, with well-defined right and wrong answers. This precision will help limit testing error and provide a more reliable measure of relative information loss. Finally, the ever increasing need for statistical understanding in areas like medicine and law makes the retention of statistical knowledge particularly important (Gigerenzer & Edwards, 2003).

II. STATISTICS MAJOR/MINOR

- **CAPSTONE COURSE: STAT. 4901 SENIOR SEMINAR:** Senior Seminar course is an opportunity for majors in statistics to demonstrate that they have achieved the learning objectives listed in the previous section. The course is designed to assess cognitive, affective and psychomotor learning and to do so in a student-centered and student-directed manner which requires the command, analysis and synthesis of statistical knowledge and skills. In statistics discipline the course viewed as an assessment tool of a comprehensive process described in Figure 2. The capstone assessment process described in this figure...
integrates learning from the various courses in the statistics major by paying attention to the rest of the students’ academic experience. It requires the demonstration of the understanding of key concepts in statistics that are covered in various courses and an application of that learning to a project which serves as an instrument of evaluation/assessment.

**INDIVIDUALIZED STUDENT LEARNING PROFILES:** Capstone course assessment of student learning process given above
together with the statistics majors e-portfolio help discipline to create a student learning profile for the students. The details of the
statistics majors e-portfolio is given below.

- **Statistics Majors E-Portfolio:** Statistic discipline use the University of Minnesota E-Portfolio. Statistics E-Portfoilio has the following sections some of which already provided in the basic form.

A. Characteristics of Entering Students
   - High school Statistics courses, Statistics placement score, ACT Statistics score
   - An essay written by students on their expectations and academic plans

B. Learning Development of Students in Statistics during their Stay at UMM
   - Gateway/proficiency tests from basic skills courses
   - Specially designed examinations from the core courses
   - Course project reports
   - An essay on development of statistical ideas
   - A self-report of learning by students on each Statistics course that they have taken (which will include answers to questions like: What did you learn?, Why do you think that this course is important in your Statistics education?, How will you be able to use the knowledge that you have gained in this course after your graduation?)

C. After graduation
   - Survey of Graduates

After the review of the Statistics faculty, the results of the assessment and the portfolios prepared by the students will be shared with the external consultants/reviewers for input at the stage of institutional discipline reviews. Statistics discipline is planning to continue to have the ties with St. Olaf and Grinell College from which a group of faculty carried out discipline’s 5 year review.

**III. Liberal Arts Statistical Support System**

Statistics faculty provides research support/consulting to the students from various disciplines in their course projects, senior seminars, and other sponsored projects such as Morris Academic Partners (MAP), Undergraduate Opportunities Program (UROP). Assessment of student learning in statistics has been assessed by carrying out interviews with the instructor/supervisor, attending the students’ presentations, and/or analysis of the student written work.

**IV. A. Special Areas: Service Learning/Civic Engagement**

- **Service Learning/Civic Engagement Survey**

**IV. B. Special Areas: Technology Enhanced Learning**

- **TEL Survey:** Since the statistics discipline uses technology heavily a special assessment instrument has been created for this purpose. The instrument can be viewed at [http://www.morris.umn.edu/~sungurea/telassessment/survey.html](http://www.morris.umn.edu/~sungurea/telassessment/survey.html).
### ASSESSMENT METHODS & TOOLS BASED ON LEARNING OBJECTIVES/EXPECTED OUTCOMES

#### Method(s), Measure(s), and Instrument(s) for Expected Outcome 1.
- **Capstone Course Assessment Process** *(Please see above)*
- **Learning Checks** *(Please see above)*
- **Retention of Student Learning Study** *(Please see above)*
- **Individualized Student Learning Profiles** *(Please see above)*
- **Liberal Arts Statistical Support System Assessment Tools** *(Please see above)*
- **Service Learning/Civic Engagement Surveys** *(Please see above)*
- **TEL Survey** *(Please see above)*

#### Method(s), Measure(s), and Instrument(s) for Expected Outcome 2.
- **Capstone Course Assessment Process**
- **Retention of Student Learning Study**
- **Individualized Student Learning Profiles**
- **Service Learning/Civic Engagement Surveys**

#### Method(s), Measure(s), and Instrument(s) for Expected Outcome 3.
- **Capstone Course Assessment Process**
- **Retention of Student Learning Study**
- **Individualized Student Learning Profiles**
- **Liberal Arts Statistical Support System Assessment Tools**
- **Service Learning/Civic Engagement Surveys**

#### Method(s), Measure(s), and Instrument(s) for Expected Outcome 4.
- **Capstone Course Assessment Process**
- **Retention of Student Learning Study**
- **Individualized Student Learning Profiles**

#### Method(s), Measure(s), and Instrument(s) for Expected Outcome 5.
- **Capstone Course Assessment Process**
- **Retention of Student Learning Study**
- **Individualized Student Learning Profiles**
- **Liberal Arts Statistical Support System Assessment Tools**
**Phase II.**

**USE OF OBSERVED OUTCOMES AND POSSIBLE ACTIONS**

Please comment on the possible use of the findings of your assessment plan.
(In responding to this question you may want to consider the following issues: how would the results of the assessment be communicated to faculty in your own and other disciplines? how could the results be used to improve the student learning and programs? how could the results produce input to other related processes (e.g., academic and nonacademic planning, curriculum review)? how could the results of the assessment change your unit’s mission/goal(s)? with which other units would you like to share the results of your assessment?)

Assessment of student learning results are discussed in discipline meetings and shared with other client disciplines. The reports on assessment are available at the discipline website. Also, statistics discipline communicates its findings to the academic administrative units of the University of Minnesota, Morris.

The uses of the statistics discipline assessment of student learning process based on the assessment instruments are the following

- **CAPSTONE COURSE ASSESSMENT PROCESS**
  - Curriculum renewal
  - Individual course design
  - Order of the concepts within a course
  - Change of emphasis in a course
  - Coverage within a course
  - Use of different teaching pedagogies
  - Addressing different learning styles and preferences
  - Discipline resource allocation
  - Increasing the students’ successes in post graduate academic and professional lives

- **LEARNING CHECKS**
  - Redesign of introductory level statistics courses, Stat. 1601 “Introduction to Statistics” and Stat 2601 "Statistical Methods” to serve students better on meeting their general education requirement
  - Coverage of general education statistics courses
  - Order of concepts delivered
  - Coverage within a course
  - Use of different teaching pedagogies
  - Addressing different learning styles and preferences
  - Discipline resource allocation
  - Increasing the students’ successes in other courses that require statistical knowledge

- **RETENTION OF STUDENT LEARNING STUDY**
  - Redesign of introductory level statistics courses, Stat. 1601 “introduction to Statistics” and Stat
2601 "Statistical Methods" to serve students better on meeting their general education requirement

- Coverage of general education statistics courses
- Order of concepts delivered
- Coverage within a course
- Use of different teaching pedagogies
- Addressing different learning styles and preferences
- Discipline resource allocation
- Increasing the students’ successes in other courses that require statistical knowledge

- **INDIVIDUALIZED STUDENT LEARNING PROFILES**
  - Curriculum renewal
  - Individual course design
  - Order of the concepts within a course
  - Change of emphasis in a course
  - Coverage within a course
  - Use of different teaching pedagogies
  - Addressing different learning styles and preferences
  - Discipline resource allocation
  - Increasing the students’ successes in post graduate academic and professional lives

- **LIBERAL ARTS STATISTICAL SUPPORT SYSTEM ASSESSMENT TOOLS**
  - Enhancing student’s ability to use statistics effectively and efficiently in research

- **SERVICE LEARNING/CIVIC ENGAGEMENT SURVEYS**
  - Increasing motivation
  - Enhancing written and oral communication skills
  - Engage students with the issues related with the community that they are part of

- **TEL SURVEY**
  - Enhancing student learning by using innovative academic technologies (AT)
  - Unified vertically and horizontally integrated course websites
  - Use of different teaching pedagogies
  - Addressing different learning styles and preferences
  - Discipline resource allocation
IMPLEMENTATION NEEDS

Please comment on the information and assistance necessary for the successful implementation of your assessment process. (In responding to this question you may want to consider issues like; what are the other units (e.g., other disciplines, programs, administrators and/or committees that should produce input for the successful completion of your assessment cycle? what type of input do you need from other units? what should be the function of the Assessment of Student Learning Committee and Coordinator to increase the effectiveness of your unit’s assessment process? what type of support might your unit need for the planning and application of your assessment cycle?)

- Participation of client disciplines on surveys and interviews
- Dedicated discipline resources, including faculty time
- Enhanced support on implementation of assessment instruments
Phase III.

APPLICATION: OBSERVED OUTCOMES

Please comment on your findings of the implementation of the assessment methods and tools.
(In responding to this question you may want to summarize your findings, provide data that supports your interpretations, discuss the validity of your results, and suggest ways of improving the methods and tools that you have used.)

- **Learning checks, course-imbedded assessment of student learning, capstone course assessment process** showed our students lacked the ability to communicate their findings correctly and effectively by using simple words that can be understood by non-statisticians.

- **Capstone Course Assessment Process** findings are given below:
  - **Positive**
    - Incorporation of statistics to real world situations
    - Strength in statistical data analysis
    - Effective use of statistical software packages
    - Quality of presentation and communication of findings
    - Demonstration of independent learning and research
    - Quantity of interdisciplinary projects (education, economics, management, computer science, geology, biology)
    - High motivation, awareness of importance of statistics
    - Satisfactory performance on writing articles
    - Implementation of wide range of statistical techniques
  - **Negative**
    - Deeper theoretical perspective
    - More demonstration of knowledge on theory of statistics and probability
    - More emphasis on scientific writing

- **Capstone Course Assessment Survey**: The results of the survey are given below together with the assessment instrument used. The surveys have been classified into two stages: earlier and recent. Cut off point for the stages is academic year 2003. It is hypothesized that the second stage would reflect the changes made based on the findings of the assessment of student learning process. Some of the findings triggered these changes are given above such as the “inefficiencies on communicating statistical ideas effectively to non-statisticians.”

  - The survey instrument assesses the students’ learning based on three main learning objectives:
    - “Students will be able to see and communicate statistical ideas effectively”
    - “Statistics curriculum will enhance students' critical thinking in domains involving judgements based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook”,
    - “The students will demonstrate basic knowledge of statistics and sharpen their statistical intuition and abstract reasoning as well as their reasoning from numerical data”.

  The classification and regression tree (CART) analysis of the data indicates that discipline actions based on the assessment results improved students learning especially “communicating statistical ideas effectively”. The details of this analysis can be seen in Figure 3. There were no statistically significant changes in “Statistics curriculum will enhance students' critical thinking in domains involving judgments based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook”.

ASSESSMENT OF STUDENT LEARNING FORM
### Statistics Discipline: Senior Project & Presentation

**Student's Name:** 

**Date:** 

**Project/Presentation Title:**

<table>
<thead>
<tr>
<th>Assessor</th>
<th>Assessment Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistics Faculty</td>
<td>o Project Report</td>
</tr>
<tr>
<td>Non-Stat. Faculty</td>
<td>o Project Coordinator</td>
</tr>
<tr>
<td>External Evaluator</td>
<td>o Other: ................</td>
</tr>
<tr>
<td>Peer Evaluator (Student)</td>
<td></td>
</tr>
<tr>
<td>Project Coordinator</td>
<td></td>
</tr>
<tr>
<td>Other:........................</td>
<td></td>
</tr>
</tbody>
</table>

#### Assessment 1

**Students will be able to see and communicate statistical ideas effectively.**

- The student is able to describe and explain a theorem, statistical formula/model, and a solution of a problem in broad terms to a non-specialist audience.

#### Comments

<table>
<thead>
<tr>
<th>Rating Scale: 0=No opportunity to observe, 1=Unsatisfactory, 2=Below Average, 3=Average, 4=Good, 5=Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will be able to see and communicate statistical ideas effectively.</td>
</tr>
<tr>
<td>0   1   2   3   4   5</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Rating Scale: 0=No opportunity to observe, 1=Unsatisfactory, 2=Below Average, 3=Average, 4=Good, 5=Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student is able to design and deliver effective messages through the oral communication channel.</td>
</tr>
<tr>
<td>0   1   2   3   4   5</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Rating Scale: 0=No opportunity to observe, 1=Unsatisfactory, 2=Below Average, 3=Average, 4=Good, 5=Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student is able to use presentation tools effectively.</td>
</tr>
<tr>
<td>0   1   2   3   4   5</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Rating Scale: 0=No opportunity to observe, 1=Unsatisfactory, 2=Below Average, 3=Average, 4=Good, 5=Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student shows an enthusiasm toward the area.</td>
</tr>
<tr>
<td>0   1   2   3   4   5</td>
</tr>
</tbody>
</table>
Statistics curriculum will enhance students’ critical thinking in domains involving judgements based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook.

The student shows an evidence of critical and independent thinking.

The students will demonstrate basic knowledge of statistics and sharpen their statistical intuition and abstract reasoning as well as their reasoning from numerical data.

The student demonstrates basic knowledge of Statistics.

The student demonstrates a content knowledge in the area of research.

Results for STAGES = EARLIER STAGE

<table>
<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of Cases</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.000</td>
<td>3.000</td>
<td>2.000</td>
<td>2.000</td>
<td>2.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.000</td>
<td>5.000</td>
<td>5.000</td>
<td>5.000</td>
<td>5.000</td>
</tr>
<tr>
<td>Median</td>
<td>4.000</td>
<td>4.000</td>
<td>4.000</td>
<td>4.000</td>
<td>4.000</td>
</tr>
<tr>
<td>Arithmetic Mean</td>
<td>4.111</td>
<td>4.278</td>
<td>4.083</td>
<td>4.111</td>
<td>4.222</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.662</td>
<td>0.697</td>
<td>0.783</td>
<td>0.943</td>
<td>0.859</td>
</tr>
</tbody>
</table>

Results for STAGES = RECENT STAGE

<table>
<thead>
<tr>
<th></th>
<th>Q6</th>
<th>Q7</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of Cases</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Maximum</td>
<td>5.000</td>
<td>5.000</td>
</tr>
<tr>
<td>Median</td>
<td>4.000</td>
<td>4.000</td>
</tr>
<tr>
<td>Arithmetic Mean</td>
<td>4.214</td>
<td>4.243</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.946</td>
<td>0.891</td>
</tr>
</tbody>
</table>

STATISTICS DISCIPLINE ASL-2007
Figure 3. Classification and regression tree analysis of the capstone course assessment survey.
**TEL Survey:**
From our survey results we note that basic, crucial items are used most frequently by students. These are items like the syllabus, homework information, and learning activities. We are surprised more students do not use the old exams, or the lecture notes.

For those that used each learning tool, we note that students found old exams and exam-related material to be very useful. The learning activities are used frequently and are rated as very useful by those who use them.

Students find the navigation through the site basically acceptable and have some belief the appearance could be improved.

Please see the below table for the results.

<table>
<thead>
<tr>
<th>Technology Attribute</th>
<th>Percent Used</th>
<th>Sample size (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syllabus</td>
<td>95</td>
<td>282</td>
</tr>
<tr>
<td>Course Outline</td>
<td>81</td>
<td>279</td>
</tr>
<tr>
<td>Resources Links</td>
<td>75</td>
<td>280</td>
</tr>
<tr>
<td>Learning Checks</td>
<td>77</td>
<td>281</td>
</tr>
<tr>
<td>Exam Information</td>
<td>96</td>
<td>281</td>
</tr>
<tr>
<td>Previous Exams</td>
<td>71</td>
<td>281</td>
</tr>
<tr>
<td>E. Grade Book</td>
<td>65</td>
<td>283</td>
</tr>
<tr>
<td>Homework Information</td>
<td>88</td>
<td>281</td>
</tr>
<tr>
<td>Lecture Notes</td>
<td>66</td>
<td>280</td>
</tr>
<tr>
<td>Learning Activities</td>
<td>85</td>
<td>278</td>
</tr>
<tr>
<td>Statistical Computing</td>
<td>77</td>
<td>282</td>
</tr>
<tr>
<td>Email Communication</td>
<td>82</td>
<td>282</td>
</tr>
<tr>
<td>Civic Engagement Link</td>
<td>79</td>
<td>282</td>
</tr>
<tr>
<td>Chat Room</td>
<td>57</td>
<td>280</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>1</td>
<td>280</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Attribute</th>
<th>Mean Usefulness</th>
<th>Standard Deviation</th>
<th>Sample size (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syllabus</td>
<td>4.07</td>
<td>.91</td>
<td>267</td>
</tr>
<tr>
<td>Course Outline</td>
<td>3.91</td>
<td>.92</td>
<td>224</td>
</tr>
<tr>
<td>Resources Links</td>
<td>3.95</td>
<td>1.01</td>
<td>211</td>
</tr>
<tr>
<td>Learning Checks</td>
<td>3.92</td>
<td>.97</td>
<td>216</td>
</tr>
<tr>
<td>Exam Information</td>
<td>4.39</td>
<td>.78</td>
<td>267</td>
</tr>
<tr>
<td>Previous Exams</td>
<td>4.23</td>
<td>.94</td>
<td>197</td>
</tr>
<tr>
<td>E. Grade Book</td>
<td>4.15</td>
<td>.95</td>
<td>182</td>
</tr>
<tr>
<td>Homework Information</td>
<td>4.04</td>
<td>.91</td>
<td>244</td>
</tr>
<tr>
<td>Lecture Notes</td>
<td>3.84</td>
<td>1.00</td>
<td>182</td>
</tr>
<tr>
<td>Learning Activities</td>
<td>4.41</td>
<td>.83</td>
<td>234</td>
</tr>
<tr>
<td>Statistical Computing</td>
<td>3.78</td>
<td>.92</td>
<td>215</td>
</tr>
<tr>
<td>Email Communication</td>
<td>3.83</td>
<td>1.05</td>
<td>228</td>
</tr>
<tr>
<td>Civic Engagement Link</td>
<td>4.11</td>
<td>.92</td>
<td>223</td>
</tr>
<tr>
<td>Chat Room</td>
<td>3.56</td>
<td>1.11</td>
<td>157</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>4.00</td>
<td>1.00</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Attribute</th>
<th>Mean Agreement</th>
<th>Standard Deviation</th>
<th>Sample size (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site is easy to navigate</td>
<td>3.71</td>
<td>1.06</td>
<td>279</td>
</tr>
<tr>
<td>Appearance needs improvement</td>
<td>2.23</td>
<td>1.12</td>
<td>279</td>
</tr>
</tbody>
</table>
Retention of Student Learning Study (General Education):
The preliminary results of the study are given below:

For the study 50 students are randomly selected from all sections of introductory statistics courses. The response rate was 96% (48 responses).

- On the average students finished the course 2.5 years ago.
- The average score on the new exams was 39.56%. This was mostly due to poor performance on certain items such as hypothesis testing, proportions, and confidence intervals. Almost nobody got the question about turning a correlation into a “percentage of variation explained by regression” correct. Some of the students seemed to have difficulty understanding the instructions, and very few students seem to understand the Popperian logic of non-bayesian hypothesis testing (i.e. many wrote things like “these numbers are not significant, so the null is true”). On the other hand students did really well on probabilities.
- At this point one of the instructor’s student retention performance has been completed. The average relative loss for these students was 60% (note that a student who scored 100 and now scores a 50 has the same relative loss as a student who scored an 80 and now scores a 40). This seems a bit high, but it can be explained in part by (a) the fact that the instructor may have awarded more partial credit when s/he grade the exams than the project investigator did, (b) students were not provided with formula sheets as would have been allowed on the in-class exam, (c) students were instructed to NOT study before taking the exam and (d) many students seemed to lose interest in the online exam toward the end, when the harder 10-point questions came up. Very few students did well on these last 2 questions, and we think this was in part due to lack of interest in taking the exam. If this theory is right, then some students should show lower relative loss due to differences in examinations between instructors, since their exams are multiple-choice, and requires varying effort from students.
- Here are the performance breakdowns by professor:

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor 1</td>
<td>34.2%</td>
<td>(15.84)²</td>
</tr>
<tr>
<td>Instructor 2</td>
<td>36.1%</td>
<td>(12.65)</td>
</tr>
<tr>
<td>Instructor 3</td>
<td>48.2%</td>
<td>(17.85)</td>
</tr>
<tr>
<td>Instructor 4</td>
<td>29.5%</td>
<td>(17.85)</td>
</tr>
</tbody>
</table>

- The better performance of one of the instructor’s students can be explained with the difficulty of the exam.

There was surprisingly little reliable trend by year. Here are the year breakdowns:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>36.74</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>43.55</td>
<td>23.57</td>
</tr>
<tr>
<td>2004</td>
<td>44.25</td>
<td>18.83</td>
</tr>
<tr>
<td>2005</td>
<td>30.29</td>
<td>14.36</td>
</tr>
<tr>
<td>2006</td>
<td>44.03</td>
<td>11.83</td>
</tr>
<tr>
<td>Total</td>
<td>39.55</td>
<td>18.23</td>
</tr>
</tbody>
</table>

On the other hand the trend by final course grade was stronger:

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00</td>
<td>22.6667</td>
<td>12.50333</td>
</tr>
<tr>
<td>3.00</td>
<td>33.6988</td>
<td>17.04494</td>
</tr>
<tr>
<td>3.33</td>
<td>39.7199</td>
<td>29.47776</td>
</tr>
<tr>
<td>3.67</td>
<td>36.6976</td>
<td>14.85357</td>
</tr>
<tr>
<td>4.00</td>
<td>49.2342</td>
<td>15.88102</td>
</tr>
</tbody>
</table>

The most striking observation is the jump in the student’s retention when we move from A- to A’s.

- Females actually did marginally better than males, although this is not significant.

<table>
<thead>
<tr>
<th>SEX</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>40.3126</td>
<td>18.24078</td>
</tr>
<tr>
<td>Male</td>
<td>37.5175</td>
<td>18.79765</td>
</tr>
<tr>
<td>Total</td>
<td>39.5556</td>
<td>18.23427</td>
</tr>
</tbody>
</table>

² Standard deviations are given in paranthesis
Here is a breakdown by final course grade:

<table>
<thead>
<tr>
<th>RELATIVE_LOSS</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.00</td>
<td>34.67</td>
<td>3</td>
<td>9.815</td>
</tr>
<tr>
<td>3.00</td>
<td>40.67</td>
<td>3</td>
<td>10.504</td>
</tr>
<tr>
<td>3.33</td>
<td>59.00</td>
<td>2</td>
<td>9.899</td>
</tr>
<tr>
<td>3.67</td>
<td>55.50</td>
<td>3</td>
<td>8.352</td>
</tr>
<tr>
<td>4.00</td>
<td>48.09</td>
<td>5</td>
<td>20.117</td>
</tr>
<tr>
<td>Total</td>
<td>46.93</td>
<td>16</td>
<td>14.960</td>
</tr>
</tbody>
</table>

As one can observe, the relative loss has a hump shape, with B+ students losing the most material. However there is a high variation from one student to the other. An interesting hypothesis that has been formed to test is “some students have mastered the art of getting A’s without actually learning, while other students really learn the concepts and it sticks with them”.

Correlation between their new score and their final course grade is .439, p=.014.

Learning Checks:
The performance of the students on various topics covered in general education statistics courses is given in table 1. The results pinpoint the topics that need to be studied from both content and pedagogical point of views to improve student learning:

<table>
<thead>
<tr>
<th>Section</th>
<th>Concept</th>
<th>Sample Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Displaying Distributions</td>
<td>404</td>
<td>78.83</td>
<td>21.99</td>
</tr>
<tr>
<td>1.2</td>
<td>Describing Distributions</td>
<td>375</td>
<td>76.02</td>
<td>20.43</td>
</tr>
<tr>
<td>1.3</td>
<td>Normal Distributions</td>
<td>352</td>
<td>78.87</td>
<td>19.82</td>
</tr>
<tr>
<td>2.1</td>
<td>Scatterplots</td>
<td>282</td>
<td>86.79</td>
<td>20.35</td>
</tr>
<tr>
<td>2.2</td>
<td>Correlation</td>
<td>299</td>
<td>63.29</td>
<td>22.64</td>
</tr>
<tr>
<td>2.3</td>
<td>Least-Squares Regression</td>
<td>250</td>
<td>57.70</td>
<td>28.04</td>
</tr>
<tr>
<td>2.4</td>
<td>Cautions @ Regress &amp; Corr</td>
<td>199</td>
<td>63.34</td>
<td>25.80</td>
</tr>
<tr>
<td>2.5</td>
<td>The Question of Causation</td>
<td>139</td>
<td>67.62</td>
<td>32.89</td>
</tr>
<tr>
<td>3.1</td>
<td>First Steps</td>
<td>229</td>
<td>76.12</td>
<td>22.94</td>
</tr>
<tr>
<td>3.2</td>
<td>Design of Experiments</td>
<td>227</td>
<td>91.10</td>
<td>15.05</td>
</tr>
<tr>
<td>3.3</td>
<td>Sampling Design</td>
<td>256</td>
<td>55.94</td>
<td>26.73</td>
</tr>
<tr>
<td>3.4</td>
<td>Toward Statistical Inference</td>
<td>212</td>
<td>81.57</td>
<td>21.02</td>
</tr>
<tr>
<td>4.1</td>
<td>Randomness</td>
<td>261</td>
<td>78.73</td>
<td>30.66</td>
</tr>
<tr>
<td>4.2</td>
<td>Probability Models</td>
<td>305</td>
<td>59.67</td>
<td>26.40</td>
</tr>
<tr>
<td>4.3</td>
<td>Random Variables</td>
<td>206</td>
<td>78.74</td>
<td>21.65</td>
</tr>
<tr>
<td>4.4</td>
<td>Mean and Var of Rand.Vars</td>
<td>193</td>
<td>70.47</td>
<td>26.56</td>
</tr>
<tr>
<td>4.5</td>
<td>Probability Laws</td>
<td>173</td>
<td>67.87</td>
<td>26.86</td>
</tr>
<tr>
<td>5.1</td>
<td>Counts and Proportions</td>
<td>193</td>
<td>61.90</td>
<td>21.16</td>
</tr>
<tr>
<td>5.2</td>
<td>Sample Means</td>
<td>232</td>
<td>69.93</td>
<td>28.65</td>
</tr>
<tr>
<td>6.1</td>
<td>Estimating with Confidence</td>
<td>278</td>
<td>68.20</td>
<td>27.49</td>
</tr>
<tr>
<td>6.2</td>
<td>Tests of Significance</td>
<td>250</td>
<td>74.44</td>
<td>22.01</td>
</tr>
<tr>
<td>6.3</td>
<td>Use and Abuse of Tests</td>
<td>164</td>
<td>81.71</td>
<td>19.60</td>
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<tr>
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<td>Comparing Two Means</td>
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<td>Inference Two Way Tables</td>
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<td>Form/Models for Two Way</td>
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<td>12.1</td>
<td>One-Way ANOVA</td>
<td>87</td>
<td>57.78</td>
<td>26.99</td>
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</table>
ACTIONS TAKEN

Please comment on the actions that you have taken or planning to take based on your findings.
(In responding to this question you may want to consider the following issues; what other units were involved with the actions that you have taken? what was the impact of the actions that you have taken on the students’ learning? what other structures do you propose to increase the success of you actions?)

- As a solution “the students’ weakness on communicating their findings correctly and effectively by using simple words that can be understood by non-statisticians”, statistics discipline started to implement the Media Reports Project to improve students’ communication skills while addressing other important learning objectives. Media reports can be viewed at www.morris.umn.edu/services/cst/statbook/maps/. Assessment of student learning on both cognitive and attitudinal domains indicated a substantial improvements. Discipline will continue to use the tool and keep on assessing its effectiveness. The results are discussed in various articles published by statistics faculty.


Some main features are summarized below.

MEDIA REPORTS PROJECT

This project is a collaborative effort by the Statistics Discipline, UMM Center for Small Towns, and UMM External Relations. The mission of the Center for Small Towns is to focus the University’s attention and resources toward assisting Minnesota’s small towns. Locally identified issues create applied learning and research opportunities for faculty and students. In our previous civic learning initiatives, namely the Community Service Learning Projects, and the Civic Engagement Workbook for Statistics, community benefactors identified and defined a problem, then the Center for Small Towns coordinator formulated a way to integrate the solution process of this problem into course structure. Students worked on the problem and communicated their findings to the community benefactor. This integration involved teaching elements such as classroom examples, homework and exam questions, learning checks, required or optional chapter or course projects, and classroom discussions.

In this Media Reports Project, each student in the introductory statistics course identifies and defines a problem or issue to a community of interest to the student. This is typically easy for the student, due to substantial past experience with at least one “community” of some sort. The student then collects data, creates a relevant graphical display, and writes a short summary of findings. This summary is designed to be of interest to community members, and available for use by media.

Figure 2 summarizes most of the features of the project, including, student learning objectives, other expected outcomes, timeline for a fifteen week semester, elements of the process, and units involved. We have developed a process that integrates learning objectives of statistics and community data analysis needs. At the same time we are building skills and knowledge in students for use after the course is complete. The media reports project has a wide range of impacts: enhancing student statistical communication, providing topics of interest for undergraduate research in other disciplines, and giving visibility to the institution. The details of the project are given at www.morris.umn.edu/services/cst/statbook/, and the students’ work can be viewed at www.morris.umn.edu/services/cst/statbook/maps/.

GOALS, LEARNING OBJECTIVES AND EXPECTED OUTCOMES

There are three general goals of the project: enhance student learning of statistical concepts, concentrate on the higher level of the integration in collaborative structures, and integrate civic learning with broader institutional goals. By this, we envision civic learning impact beyond student learning in a course, such as impacting admissions and external relations activities.
The project has a wide range of student learning objectives. Of course, primary goals are to improve students’ learning on main concepts and improve their communication of statistical information. We also expect to increase student awareness and sense of community, enhance learning motivation through a sense of ownership of the learning activity, and improve student research and computing ability. Another direct, teaching-oriented objective of the project is to carry out an alternative student learning assessment. Evaluations by peers, the Center for Small Towns staff, and the instructor gives a comprehensive assessment process.

Other expected outcomes can be grouped into two areas: community, and the university in general. An important outcome is to help the community understand statistical data that is available to them. This helps formulate good questions, enhance decision-making, and make progress on the issue of interest. Universities will create a more efficient and effective institutional environment by coordinating efforts at various levels. Achieving this institutional efficiency and effectiveness is a key expected outcome of the project. By having media reports as a common connection, the admissions office, the external relations office, and other units, can more effectively promote and publicize the University.

- **STUDENT LEARNING OBJECTIVES**
  - Emphasize Civic Responsibilities
  - Create an interest on subject
  - Elevate motivation
  - Introduce sense of ownership
  - Learn to locate & secure data sources
  - Enhance statistical research ability
  - Enhance statistical computing competencies
  - Enhance sense of community
  - Expand awareness of the community
  - Enhance statistical writing ability
  - Increase community involvement
  - Increase student interaction & collaboration

- **OTHER EXPECTED OUTCOMES**
  - Carry alternative student learning assessment
  - Meet land grant institution mission
  - Enhance teaching
  - Provide faculty research opportunities
  - Satisfy faculty service/outreach
  - Publicize UMM
  - Recruit new students
  - Inform community
  - Help community on understanding statistical data
  - Increase community-university collaboration

<table>
<thead>
<tr>
<th>TIMELINE</th>
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<th>UNITS INVOLVED</th>
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<tbody>
<tr>
<td>WEEK 2</td>
<td>Civic learning training</td>
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<td>WEEK 3-4</td>
<td>Locate a data set</td>
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<tr>
<td>WEEK 4-7</td>
<td>Carry out statistical analysis</td>
<td>STUDENT</td>
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<tr>
<td>WEEK 8</td>
<td>Interpret the results</td>
<td>STUDENT</td>
</tr>
<tr>
<td>WEEK 9</td>
<td>Write a media report</td>
<td>STUDENT</td>
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<td>WEEK 10</td>
<td>Go through peer review process</td>
<td>OTHER STUDENTS</td>
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<td>WEEK 11</td>
<td>Revise the report</td>
<td>STUDENT</td>
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<td>WEEK 12</td>
<td>Submit the report electronically</td>
<td>STUDENT</td>
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<td>WEEK 13</td>
<td>Evaluation of the report</td>
<td>TEACHING ASSISTANT</td>
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<td>WEEK 14</td>
<td>Final revision of the report</td>
<td>CENTER FOR SMALL TOWNS INSTRUCTOR</td>
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<tr>
<td>WEEK 15</td>
<td>Make the report available electronically</td>
<td>EXTERNAL RELATIONS</td>
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<td></td>
<td>Discussion on implication(s) and action(s)</td>
<td>CENTER FOR SMALL TOWNS</td>
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</tbody>
</table>

- Based on *Capstone Course Assessment Process*
  1. Higher emphasis on theory of statistics in higher level courses
  2. Early start on project
  3. More extensive coverage of topics such as survey sampling and design of experiments in the statistics
curriculum.


5. Based on Capstone Assessment Survey results there were statistically significant improvement on student learning for meeting “communicating statistical ideas effectively” but not “enhancing students' critical thinking in domains involving judgments based on data and stimulate the type of independent thinking requiring research beyond the confines of the textbook”. Statistics faculty is in a process of developing a new approach to enhance students learning in both areas.

Based on the TEL Survey

1. The course website has been continuously redesign and updated based on students’ responses

2. The discipline faculty applied and received a grant to create a vertically and horizontally integrated technology enhanced learning environment.

The project will involve development of content delivery tools to be used at various levels of statistics and probability courses. Since some of the concepts are common in most statistics course, the same developed material can be employed in different courses with modifications in the “statistical sophistication level”. These courses are:

- Stat. 1601. Introduction to Statistics
- Stat. 2601. Statistical Methods

As an example, the concept of “central limit theorem” has been discussed in all of these courses. An interactive visual simulation on this concept can easily enhance the students’ learning at various levels.

Another aspect of this project will be seamless integration of the statistical software to the course. During this integration process the following points will be taken into consideration:

1. The statistical software and text should "speak the same language" and use the same terminology, so that the learner will not be forced to learn two languages at the same time.

2. The output of the statistical software package should match the format given in the text.

3. To enhance learning, software should have flexibility. As an example when a stem-and-leaf display is produced it should give the learner an option of selecting various versions, instead of producing the "best".

4. Steps required in use of statistical computing should match the steps given in the text.

5. Use of statistical software package for learning and application should be distinguished. For example, in constructing boxplots the learner will be directly led to the boxplot module without having to select an appropriate menu item. In the same direction, the output will be directed to learning rather than the one which assumes the users know all aspects of the boxplots.

This project aims to respond to diverse ways of learning. Since students have different learning style, the proposed learning environment will enable faculty to present material in alternative formats to accommodate such differences. For a particular topic in introductory statistics the instructor will be able to give a verbal presentation, a written presentation, a visual presentation by way of graphs or dynamic graphs, or with interactive web page that will present the topic in a slightly different way to reinforce the linkage between past and current materials.

The backbone of the project can be viewed by visiting http://www.morris.umn.edu/~sungurea/introstat/index2601.html and clicking on the “Alternative Content Presentation” on the site map.

Based on the Retention of Student Learning Study

Statistics faculty is in a process of completing the statistical analysis on the collected data. After this atage, discipline will search for innovative ways of improving student retention of learning.
Appendices

Number of degrees granted within the academic years 2000-2007

| Major | 55 |

Please list the post graduate activity of your students and provide approximate percentages for each group.

According to the discipline records, 100% of the students who applied to a graduate program received acceptance from the schools that they have applied. Also, very high percentage of them granted financial support in the forms of teaching assistantships, fellowships, scholarships, and research assistantship.

Post graduate activity of the students who graduate with the statistics major is given in the table 2. The distribution of graduates into various post graduate activities are summarized in figures 4 and 5.

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**Figure 4.** The distribution of post graduate activities into general categories including the unknown cases.

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**Figure 5.** The distribution of post graduate activities into general categories excluding the unknown cases.
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<tr>
<th>Year</th>
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<th>Postgraduation</th>
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<td>Thackeray, Lisa M</td>
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<td>Wyman, Nicole</td>
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<td>and Earlier</td>
<td>Deb Kielhold</td>
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*Table 2. Post graduate activities*
Studio Art

Overview
Studio courses serve the needs of students planning to pursue graduate studies in art, students interested in exploring their own creative potential as part of their general education, and students preparing for secondary school teaching.

The following Studio Art courses are also required for the Art History Major, Digital Media Studies, Art Therapy, Arts Administration Areas of Concentration:
- ArtS 1101, Basic Studio Drawing
- ArtS 1102, Basic Studio Drawing II
- ArtS 1103, Basic Studio 2-D Design
- ArtS 1104, Basic Studio 3-D Design
- ArtS 1105, Basic Studio Discussion I
- ArtS 1006, Basic Studio Discussion II

Learning Objectives for Studio Art:

1. Students will demonstrate a mastery of fundamental principles, formal strategies and technical skills in a variety of media and approaches to their use, as well as an understanding of relevant contemporary conceptual issues in the visual arts. This includes materials, techniques, the safe use of tools (for example, everything from paint brushes, potters tools, wheels, and kilns, carpentry tools, power tools, to printmaking presses and equipment), and the safe disposal of waste.

2. Students will demonstrate a mastery of the skills of critical analysis of works of art and communication skills necessary for activities in the visual arts; this includes the ability to talk clearly, independently and thoughtfully about their own art as well as the art of others.

3. Students will demonstrate a mastery of fundamental principles, formal strategies and skills in a variety of drawing, as well as an understanding of relevant traditional and contemporary conceptual issues in the medium.

4. Students will demonstrate formal and conceptual competence in at two disciplines in the studio arts, taking a one- and two- year sequence in two chosen mediums.

5. Students will demonstrate knowledge the major traditions and the cultural significance of the visual arts, understanding the historical and contemporary development of art and their place in it, the relationship of art to self, culture, and society.

How Learning Objectives Are Met:
(Responses relate to specific objectives numbered above)

1. Students are required to take ArtS 1101-1106, the Basic Studio Sequence, that gives an overview to various studio methods in drawing, two-dimensional and three-dimensional processes, and a discussion component to provide context for art-making as well as foster verbal skills. The works created in the courses are evidence of the mastery of the principles, skills and safe practices required for completing this objective.
2. Students are required to take ArtS 1105 and 1106, Basic Studio Discussion, and three Art History courses. In addition, the critique structure of all the studio courses also develops critical thinking skills in relation to one’s personal work. The Junior and Senior Reviews are opportunities to demonstrate the cumulative knowledge from Studio and Art History courses.

3. Students are required to take ArtS 1102 and 1103, Basic Studio Drawing I and II. These courses cover traditional observational drawing techniques, color and the experimental potential of drawing as seen in contemporary art. Students also take ArtS 2101 and 2110, Second Year Drawing, which covers human anatomy as a subject for drawing.

4. Students may take advanced coursework in Painting, Drawing, Ceramics, Printmaking, Sculpture, and Digital Imaging/Photography. The curriculum allows for two years of work in each area.

5. Students are required to take ArtS 1105 and 1106, Basic Studio Discussion, and three Art History courses.

Scope of Assessment Activities:

Course Embedded Assessments

• Portfolio Evaluation, Critiques and Classroom Discussions
  Students receive instruction in a course’s material processes, formal concepts, and techniques; and the results are evaluated on an ongoing, individual, one-on-one basis by the instructor and also through group critique sessions involving the class and the instructor. Critiques are a key tool for assessment in courses, students are directly evaluated for craftsmanship, concepts, presentation, growth, ability to communicate verbally and through their art, and the ability to think independently. Critiques are scheduled upon the completion of one or more small project, completion of a unit, at midterm, and for a final portfolio grade. These include: Individual Critiques, Group Critiques, and Discussions.

• Quizzes, papers and sketchbooks
  - Students complete quizzes regularly to evaluate their understanding of terms, processes and safety procedures.
  - Sketchbook projects are assigned and reviewed frequently to track student's progress in techniques, understanding of formal principles and development of a conceptual direction.
  - Students write response papers in the Basic Studio Discussion course for videos relating to various artists and issues.

• Work retained for permanent collection (Printmaking and Digital Imaging)
  The Printmaking program retains a print from each student for each individual project and the Digital Imaging program makes CD-ROM's of student work. This practice works only in an area where multiple images can be made.

• Documentation of Work for Image Archives (Drawing, Painting, Sculpture, Ceramics and Photography)
  In fields where a unique object/image is made, faculty document various projects in slide form or in a digital format. Images are kept in a collection that can be used to evaluate the
progress of the program, and this collection also functions as a teaching archive when the
assignment is repeated.

• Class Presentations/Student-Led Discussions
  Students are assigned presentations in many studio courses to research processes,
techniques or artists that relate to a current assignment. In Basic Studio Discussion, a one
year course for incoming art majors, students in groups must lead the discussion for the
assigned reading. Students are graded on how well they understand the topic and how
they engage fellow classmates in a critical dialogue.

• Group Projects/Collaborative Activities
  Students in the Basic Studio Sequence and upper-division studio courses participate
group projects that require the students to pool resources and skill levels to complete a
task. In addition, both Ceramics and Sculpture do annual metal pours and outdoor kiln
firings that are dependent on collaborative methods.

• Print exchanges with other Universities.
  Since 2000, the Printmaking program has had print exchanges with other printmakers
from institutions including: University of Wisconsin-Madison, Xavier University, and
University of Arizona-Tucson, California State at Long Beach, and California State
University at Northridge. Students produce a set number of prints to be exchanged with
the partner program, and both schools receive a complete set of prints for their print
archives. Students from the other institutions have included undergraduates from all
levels as well as graduate students in the printmaking programs. This has been a valuable
tool to evaluate the cumulative skills of UMM's printmakers on both a regional and
national level.

• Pre- and Post-testing
  Students enrolled in either Basic Studio Drawing (for majors) or First Year Drawing (for
non majors) are asked to do an in-class drawing on the first day on instruction that will be
used to compare the student's progress with the final drawing at the end of the semester.
Individual faculty members are responsible for this process when they teach a course in
drawing. Students discuss the drawings with the faculty member at the end of the course.

• Outside the Classroom:
  • Senior Exhibit All-Student Show Documentation
    Since 1997, Studio Art Faculty has documented the annual students exhibits via video
    and digital photography. It has been a helpful tool for upcoming senior classes to view
    previous exhibits in preparation for their shows, to see how the students chose to
    integrate a variety of mediums and conceptual approaches into a cohesive collection of
    work. The video and digital images are held with the discipline coordinator.

  • All-Student Show Juror
    Since 2006, Studio Art has used outside curators from regional art venues to select works
    for the annual exhibit, and write a statement for the show.

• Across the Discipline:
  • Junior and Senior Reviews
Students are evaluated for work created across the discipline in both their Junior and Senior year in the program. This is a portfolio evaluation accompanied by a written artist statement. Students are present for the review and converse with the faculty committee about their specific artwork, processes and understanding of formal and aesthetic concepts.

**Direct Measures of Student Learning:**

*Portfolio Assessment and Critiques via Specific Coursework*

Final artwork completed for the course itself demonstrates outcomes in mastery of the principles and skills, the critiques demonstrate the degree to which students can explain and analyze both their own and others’ work in relation to traditional and contemporary art concepts.

*Portfolio Assessment via Junior and Senior Reviews*

In the fall of 2003, the Studio Art Faculty revised the process for the junior and senior reviews to provide a consistent evaluation structure and clarity for students in the form of a printed review sheet. Students are also asked to provide a written artist statement for each review. Junior and Senior reviews are made up of a committee of Studio Art and Art History Faculty members, and since faculty serve on a selection of the reviews per semester, this form provides a necessary record of prior evaluation as the student moves from the junior to the senior review. The form is a consensus of the committee's evaluation of the student. Students are ranked from 1-10 for each category and receive written comments as well. Copies of the completed form and artist statement are given to the student, the academic advisor and the discipline coordinator. The rankings for students in relation to each question have been collected and tabulated to track performance on all the individual questions on the review form.

The evaluation form contains the following areas for review.

I. Formal Concerns:

A. Student demonstrates an understanding of the elements of art and the principles of design.
B. Student's drawings represent a level of skill appropriate to the student's experience.

II. Technical Concerns:

A. Student can identify / describe the materials and technical processes involved in creating their work.
B. Student is completing the quantity of work expected for their level of experience.
C. Student is completing work at the quality expected for their level of technical experience.
D. Student demonstrates an understanding of the importance of presentation & craftsmanship. This should include at least 3 pieces of their choice (representing more than one media), completed to a level of finish and refinement expected for the student's level of experience.

III. Conceptual & Communication Skills:

A. Student is able to discuss the conceptual basis of their work and communicate the ideas that they are exploring.
B. Student demonstrates an understanding of how their work relates to a broader context and is able to articulate the relationship, referring to cultural, art historical and / or personal influences.

C. Evaluate student's written statement. Artist's statement describes the formal, technical and conceptual foundations of the student's work.

•External evaluation of All Student Show
  Exhibit is juried by regional expert in the arts, and juror writes selection statement to be included with the work in the show.

**Interplay of Direct Measures, Improved Student Learning, and Discipline Goals**

Since the evaluation forms were integrated in 2003, Studio Art has used the results of the rankings of the students to evaluate the program in terms of the overall learning objectives for the discipline and how students are learning in the classes.

Assessed Trends:

• **Students do on average better in the first Junior Review than in the second Senior Review.**
  Average rankings for each of the evaluation questions were somewhat lower for the second review. The faculty feels that this could be the result of “comfort” with the process (and less preparation or investment in the second review), or reduced amounts of work to evaluate for the Senior review because it often happens within a year of the Junior Review.

  The discipline has changed the Junior Review into a Second Year Portfolio Review to extend the time between reviews and improve the quantity of work in both portfolios. In addition, the Senior Review has been integrated into a new capstone course, Senior Art Thesis, and will be a graded event.

• **Students need more experience with writing in the arts.**
  Feedback and numerical rankings on the Junior and Senior Review forms indicate that students need more experience writing in regards to the arts. In ArtS 1102, Basic Studio Drawing II, students are asked to write more about theirs and other classmate’s work as another form of critical assessment of artwork, and the new capstone course, Senior Art Thesis, will address writing for graduate programs, grants, and gallery proposals.

• **Students need more experience with other professional skills in the arts like framing and other exhibition skills..**
  Feedback and numerical rankings on the Junior and Senior Review forms indicate a need to educate the students better in methods of preparing work for the gallery that is more considerate of the artwork and well-crafted. This is another component in the capstone course and will now be a graded project.

• **More students are requesting a major or minor emphasis in areas like Photography/Digital Imaging, Drawing, and Ceramics.**
  The Discipline added these three areas to the major in the spring of 2006.

**General Education Categories Spanned by the Discipline Courses**
Stagecraft is a course central to the Theatre Major. Students study the development of stagecraft, with emphasis on theatre architecture, from the 6th century BC Greeks to present day. Additionally we study the basic forms of stage scenery and their functions in the theatre. Finally, the course enables students to become intimately familiar with the tools, materials and techniques employed in creating the visual environment of the stage.

The stated objective of the class is to teach a knowledge and appreciation of the history, theory, tools, materials and techniques employed in the construction, painting, and shifting of stage scenery.

The assessment exam is a multiple-choice final exam from previous classes in Stagecraft I have taught. The questions involve history, building techniques, tools and scene painting techniques demonstrated in class, and theory involved in engineering and painting scenery.

The assessment has two primary elements, one is to simply determine what students know before the class is taught. Based on this assessment I alter the emphasis on the individual lectures, and pay particular attention to those elements in pre-examination reviews. The second element is a comparison of individual scores on both exams.

On the first try of this assessment exam the average score was 44.5. The final exam, although not identical, was very similar. The average score for that exam was 85.9. Not a single student failed the final exam.

One advantage of the assessment that I had not anticipated is that it telegraphs what I think is important in the class to the students at the very beginning of the course. They spoke of the assessment exam, and the items that were emphasized during the course, at some length during the final exam review session.

I will continue to use this assessment tool and refine it in the future to give myself more specific data on questions missed in categories, such as tools, or materials, to painting techniques.