Davis Educational Foundation

Grant Report

Grantee: Interim Report __X__ Final Report ____

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Project Title: Transformation of the General Education Program and Creating an Instructional Development Program tied to the Revised Program

Date Awarded: January 2006 Amount Granted: $116, 917 per year for two years Term: 2 year

Define program outcomes.
Create program that reflects the principles, and the identified skills and outcomes.
Develop new courses and revise existing courses.

Results:
The Davis grant was a catalyst in the design and approval of the Integrative Studies Program based on a set of core principles, and identified skills and outcomes. A total of 130 courses and 443 sections have been created, revised, and offered in the first year of design (2006-2007) and the first year of implementation (2007-2008).

B. To create and offer an instructional development program tied to the revised general education program.

Support faculty as they initiate, design, create, lead, and contribute to instructional development institutes to develop new courses and effect curricular improvements.

Develop a peer coaching model.

Results:

A Thinking and Writing Institute was held in May 2006 with twelve faculty participating, eight of whom were full-time tenured or tenure track faculty. A Quantitative Literacy Institute was held during the 2006 fall semester with five faculty participating, all of whom were full-time tenured or tenure-track faculty. Thirteen Thinking and Writing courses were piloted in the fall semester and will continue to be piloted in the spring semester. Three Quantitative Literacy courses were piloted in the 2007 spring semester and one in the summer. Institutes were facilitated by faculty with expertise in these areas.

During the 2007 spring semester two faculty facilitated roundtables were held. The roundtables focused on two integrative outcomes (ethics and diversity). Faculty who identified either of these as outcomes in their courses participated in these roundtables.

Two more institutes Thinking and Writing [TW] and Quantitative Literacy [QL]) were held in May 2007 for faculty who were in the process of creating courses for the fall semester. A total of twenty participated in the TW Institute and eight participated in the QL Institute. In addition we held a perspectives dinner and roundtable in May with twenty-seven faculty participating and an interdisciplinary workshop in May with sixteen faculty attending eight faculty facilitating and presenting.

In 2007-2008 we held meetings and roundtables for faculty teaching in each area of the program and for faculty who had identified ethics and/or diversity as outcomes in their courses. Five

diversity roundtables were held with 47 faculty participating; four Ethics roundtables were held with 26 faculty participating; four Interdisciplinary roundtables were held with 26 faculty participating; three perspectives roundtables were held with 54 faculty participating; and follow-up institute dinner meetings were held in QL with 18 faculty participating and TW with 34 faculty participating.

In May 2008 we held five workshops: TW (6 participants), QL (3 participants), Interdisciplinary (28 participants), Perspectives (27 participants) and Honors (8 participants).

2. Strengthening teaching and learning practices and controlling costs.

Methods used to assess project's impact on student learning – results.
Impact costs.

Results:

The new program was implemented in the 2007 fall semester. Faculty responsible for conducting assessments have worked with faculty teaching courses, area coordinators and members of the Assessment subcommittee of the Integrative Studies Program Committee to create initial assessment methods and processes. Results of assessments conducted to date are summarized in Appendix D. In addition, assessment results from faculty responses to the institutes and work they did in workshops and roundtables indicate significant changes in course development and pedagogy.

We have no information regarding the direct impact on costs of delivering the program, however, an indirect indicator of costs is the increase in the number of full-time tenured or tenured track faculty teaching the Thinking and Writing courses and the Quantitative Literacy courses. We have moved from between 0-2% of ENG 101 courses in the old general education curriculum being taught by full-time faculty to 22% of the ITW courses being taught by full-time faculty. Forty-one percent of the IQL courses are taught by full-time faculty. In addition, 38% of the fulltime faculty teach perspectives courses and 33% of the full time faculty teach interdisciplinary courses. Though we have increased the number of fulltime faculty teaching in the program, it is important to note that the adjuncts teaching in the program are of high quality and have made a commitment to both instructional development and to the Integrative Studies Program.

3. What did we learn (challenges and unanticipated outcomes)?

Challenges:
Significant challenges resulted in getting the new program approved, particularly the challenges associated with identifying categories, identifying the number of required courses in each category, and identifying disciplines that qualify in a category (for example, what courses qualify as natural sciences). Though the program was approved by a substantial margin those discussions are ongoing.

A challenge we had and continue to have is developing the quantitative literacy component of the program. It was easier to garner interest in the Thinking and Writing course because it could build on the foundation of the existing ENG 101 course. Since no parallel course existed for quantitative literacy, and because of the concurrent move to 4-credits, many faculty were unsure about creating new quantitative literacy courses. Because of this challenge we have identified alternative courses that meet the QL outcomes. This will likely work out very well as both student need and demand will be met with a combination of IQL and IQL alternative courses.

We probably could not have anticipated how labor intensive it would be to simultaneously be designing a program and the instructional development program, nor how necessary persistent attention to questions and issues would be to the success of program approval, the first institutes, and the ongoing instructional development initiatives.

The integrative outcomes have been challenging and much discussion has occurred as to whether these are the "right ones", whether additional ones should be added, or whether we need to rethink and/or revise them so more faculty clearly see how they can be incorporated in their courses.

Creating faculty cohorts has been challenging, that is, trying to create a culture in which faculty are as committed to delivering aspects of the Integrative Studies Program as they are to delivering their majors. We feel we are making significant progress with this as is attested by the numbers participating in institutes, meetings, workshops and roundtables.

Other challenges have included: completing the program map, creating and approving program policies, upper level offerings, balancing lower and upper level offerings, on-going development opportunities for those teaching in the program, transfer issues, reviewing and revising outcomes and identifying criteria and how outcomes will be assessed, revising the structure of the ISP committee.

Unanticipated Outcomes:
An unanticipated outcome was the overwhelming approval of the program (For 21, Against 5, Abstain 0), which we credit to a solid design and significant communication with faculty throughout the 2005-2006 academic year. Tying instructional development to the new program through the auspices of the funding provided by the Davis Grant enhanced faculty interest and support in moving the new Integrative Studies Program forward. Another unanticipated outcome was how quickly and how well the faculty coordinators for the first institute designed a process for delivering the institute, which serves as a model for other institutes and instructional development initiatives. The identification of area coordinators who are responsible for working with the faculty responsible for delivering various program areas has provided the attention needed to assure faculty begin to see themselves as cohorts responsible for delivering courses in these areas and in meeting area outcomes. Another anticipated outcome was how quickly we began assessing outcomes and the commitment by faculty to create rubrics and establish processes for assessing, reporting and discussing findings.

What might be beneficial to other colleges:

Assure the program design is based on a conceptual framework.
Be sure subcommittees are assigned various tasks.
Invite faculty who are not members of the committee to serve on the subcommittees.
Invite faculty who are not members of the committee to attend conferences.
Have committee members serve as liaisons to each department.
Have the deans serve as committee members.
Hold regular all campus meetings to present information and receive feedback.
Use feedback in making decisions.
Have coordinators of institutes being offered for the first time attend an existing institute so they are familiar with the process.
Tie instructional development to the revised [new] program.
Faculty support for the new Integrative Studies program was based in large part on the collaborative nature of the process, but was also grounded upon the imprimatur that Davis Foundation support provided for the TW and QL foundations courses, and the confidence that

faculty development for a new IS program would have meaningful support from the Davis Foundation. Their support helped and continues to help us to make change happen at KSC.
Be ready to be flexible with implementation issues – the best laid plans often need to be revised.
Be sure someone is always paying attention to what needs to get done and who helps keep people and processes on track.

4. How will we sustain and build upon the outcomes of the project?

Results:
The co-chairs of the Integrative Studies Program Committee (ISPC) submitted, to the provost, a budget for the Integrative Studies Program and for program assessment that is grounded in instructional development. The provost approved a budget for the ISP.

The ISPC continues to schedule campus informational meetings to discuss the program and program policies; and has a solid instructional development program in place to support faculty in assuring program outcomes will be met. We are committed to continued dialogue, and to providing faculty opportunities they need for instructional development.

The creation of the Center for Excellence in Learning and Teaching (CELT) will assure that both instructional development and student learning development programs are developed in helping faculty and students meet program outcomes.

5. How were funds spent?

Please see Addendum E

6. Comments

We have nothing but positive feedback to give the foundation. The application process is clearly articulated and it seems our grant award was based on the criteria the foundation asked for and that we addressed. The site visit was very helpful, both in helping us more clearly articulate for ourselves what out intent was and, after the visit, on reflecting and addressing the issues that were raised by foundation members. The flexibility the foundation has shown with this grant and the extensions it has provided have been greatly appreciated and have allowed us to spend the money wisely. We are so thankful for the opportunities your funding is providing.

ADDENDUM A - **INTEGRATIVE STUDIES PROGRAM**

Every Keene State College student will complete a total 44 credits (a minimum of 8 credits at the 300/400level) as follows:

I. Foundations (8 credits)

Essential Question: How do critical and creative thinking, researching, writing and evaluating quantitative information inform scholarly endeavors?

Thinking and Writing (4 credits)
Students will be able to:

- demonstrate skills and ways of thinking that are essential for all students as they move through the academic curriculum.
- write about an issue of special interest to them by focusing on a creative and complex question, investigating the question with critical analysis of readings, research and data, and using appropriate research techniques in documentation.

Quantitative Literacy (4 credits)
Students will be able to:

- apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.
- use appropriate software to create spreadsheets, tables, graphs and charts.
- read and interpret visually represented data.
- distinguish among various types of growth models (e.g., linear, exponential) and the types of situations for which the models are appropriate.
- critically read and interpret a quantitative problem.
- pose a question in the form of a mathematical model in order to solve the problem.
- apply prior knowledge to solve a new problem.

II. Developing Perspectives and Breadth of Knowledge (32 credits)
Modes of Inquiry

Perspectives Distribution

Four courses in the Arts and Humanities (16 credits) - Courses must be taken in four different disciplines.
2 courses in the Humanities
1 course in the Fine and Performing Arts
1 course in either the Humanities or the Fine and Performing Arts

Four courses in the Sciences (16 credits) - Courses must be taken in four different disciplines.
2 courses in the natural sciences
2 courses in the social sciences

Essential Questions: How are the arts and humanities constructed and defined and how do they change, shape, provoke, and represent our perceptions and our world? What assumptions, methodologies and theoretical constructs define today's sciences and how are they used to understand our world?

Perspectives Outcomes:

Students will be able to:

- articulate an understanding of representative theories in the natural and social sciences
- explore language use, linguistic forms, and language's ability to change society and ourselves.
- distinguish and assess the impact that knowledge and methodology in the natural and social sciences have on our understanding of self, society and environment
- critically and creatively engage in the aesthetic and intellectual components of the fine and performing arts.
- articulate the ways that the arts and humanities shape, change, provoke, and represent our world and our perception of the world.
- understand and interpret diverse evidence about past societies and cultures.
- understand how the scientific method differs from other modes of inquiry and ways of knowing.
- evaluate diverse approaches to the study of history and their relationship to power, privilege and difference
- use and understand the power of mathematics, statistics, and qualitative analysis to represent and investigate ideas and evidence, as well as evaluate data dependent arguments.
- analyze a creative text within its cultural, aesthetic, historical, and intellectual contexts.
- identify the values and concerns expressed in creative works.

III. Making Connections (4 credits)
Integrating Modes of Inquiry

One course in Interdisciplinary Studies (4 credits)

Essential Question: How are the skills, concepts, and values developed across disciplines applied to questions fundamental to today's interdependent world?

This category provides the faculty with an opportunity to collaborate across traditional disciplinary boundaries in designing and delivering challenging and innovative courses. **The College supports having a percentage of these courses team developed and team taught the first time the course is offered. After the initial offering, faculty will individually teach the course for a minimum of three semesters over a period of three years.**

Interdisciplinary Outcomes

Students will be able to:

- cross disciplinary boundaries to reveal new patterns and connections that reframe knowledge.
- analyze the assumptions and actions of society from multiple perspectives.
- examine national and international issues through artistic, philosophical, cultural, scientific, technological, economic, social and political lenses.
- assess their own roles and responsibilities as members of diverse communities

Integrative Studies Program Skills Outcomes

Reading	Writing	Information Literacy	Critical Thinking	Creative Thinking
▪ Identify contextual issues (author, date of publication, etc.) ▪ Read with an awareness of purpose ▪ Identify goals to focus attention ▪ Ask questions that lead to greater understanding of material ▪ Select information relevant to a purpose ▪ Demonstrate the ability to summarize and identify key points ▪ Demonstrate an understanding and ability to relate discipline- or interdiscipline specific information to theories presented in a course	▪ Write with purpose ▪ Write for an audience ▪ Organize, state and develop ideas clearly ▪ Write with syntactical and grammatical competence ▪ Understand and value academic honesty ▪ Write with an organizational schema ▪ Ask questions that lead to a richer product ▪ Incorporate research appropriately ▪ Write with authority ▪ Cultivate disciplinary and interdisciplinary expertise necessary to question sources, develop ideas, and offer interpretations ▪ Develop complex positions or arguments through writing	▪ Identify general kinds of information available in Mason Library and at KSC ▪ Find a broad array of informational material both physically, in the stacks, and on electronic sources ▪ Evaluate usefulness and reliability of information and sources ▪ Incorporate information into written work and oral presentations ▪ Properly cite sources ▪ Identify discipline-specific scholarly sources within and beyond KSC ▪ Utilize discipline-specific resources in order to find information ▪ Evaluate sophistication of sources for potential information appropriate to task ▪ Develop research (paper or project) using information appropriately	▪ Demonstrate the ability and willingness to approach a particular idea, problem, task, or goal from multiple perspectives ▪ Ask sophisticated questions when engaging an idea, problem, task, or goal ▪ Analyze and interpret evidence, conjectures, and alternative strategies related to a given idea, problem, task, or goal ▪ Gather evidence, formulate conjectures, and implement alternative strategies related to a given idea, problem, task, or goal ▪ Analyze and interpret arguments made by oneself and by others to formulate and defend a conjecture or thesis ▪ Synthesize information, arguments, and perspectives in order to create new meaning, insight, and understanding ▪ Develop analytical arguments ▪ Apply critical thinking to important ethical and societal issues and problems ▪ Acknowledge and develop both insight and perspective	▪ Use novel ideas, perspectives, or solutions when engaging with a problem, task, or goal ▪ Engage a problem, task, or goal with sustained effort over a period of time ▪ Use multiple models or representations of ideas ▪ Express personal ideas, points of view, or feelings and bring those to a product ▪ Invent and re-apply ideas ▪ Confront questions with multiple answers ▪ Form new combinations of ideas ▪ Reframe new ides (metaphors, analogies, use of models) ▪ Consider diverse points of view in order to reconstruct them imaginatively, emphatically, and accurately ▪ Demonstrate open-mindedness and flexibility in thinking ▪ Create new uses for existing patterns or structures ▪ Go beyond standard schema when investigating a problem ▪ Solve unstructured problems

Critical Dialogue	Technological Fluency	Quantitative Reasoning
▪ Organize what one wishes to convey ▪ Speak with purpose when conveying thoughts/ideas ▪ Avoid "fillers" (uh, you know, like) when conveying thoughts/ideas ▪ Develop the skill to use emotional involvement as a tool of respectful engagement with the listener ▪ Meet allotted time guidelines ▪ Project voice so all can hear ▪ Use language appropriate for the audience or other discussion participants ▪ Demonstrate thoroughness of research and effective preparation in making a formal presentation ▪ Engage the listener through verbal and non-verbal behaviors ▪ Demonstrate an awareness of the listener and the response of others to what is being said ▪ Use paraphrase or restatement in responding to a listener ▪ Demonstrate active listening in order to avoid disengagement with the speaker ▪ Maintain focus on the content of the presentation, regardless of the speaker's style of delivery ▪ Demonstrate appropriate nonverbal behaviors (attention, engagement) ▪ Practice listening objectively ▪ Recognize emotional involvement while listening ▪ Practice mental engagement with the speaker in order to formulate thoughtful questions based on conversations and presentations ▪ Make notes regarding key points in order to question or respond effectively	▪ Use email to communicate with classmates and professors (successfully sending, receiving, and manipulating a variety of file-formats) ▪ Use Internet search techniques and engines with discrimination to find resources and information ▪ Format text documents, including academic papers, using an approved style ▪ Use appropriate presentation software to deliver a formal presentation ▪ Use a database and/or spreadsheet to access and set up information ▪ Use an information management program (e.g., SPSS, e-portfolio, institutional repository) to organize, interpret and convey ideas ▪ Employ computer media (visual images, sound, graphical displays, etc.) as appropriate in academic work	▪ Use an array of numerical manipulations to interpret basic information ▪ Read and interpret graphs, charts and tables in common media ▪ Analyze the relationships between two variables ▪ Use the basic measurements of statistics ▪ Use symbolic expressions to represent, convey, and interpret relationships among variables ▪ Develop and apply appropriate quantitative-oriented problem-solving strategies ▪ Read and interpret graphs, charts and tables in discipline specific media ▪ Perform simple data analysis, both numerical and graphical ▪ Draw conclusions and inferences supported by own data analysis ▪ Critically evaluate conclusions and inferences drawn by others based on data presented as support

Integrative Outcomes

The integrative outcomes provide students the opportunity to learn and discuss overarching themes, perspectives, and paradigms that necessitate their active engagement in the KSC learning environment. In order to achieve this engagement, every course in the Integrative Studies Program must address at least one of the integrative outcomes.

Diversity
Students will be able to:
- recognize how differences shape approaches to identity, knowledge, and power.
- apply diverse perspectives and experiences to develop disciplinary arguments.

Ethics
Students will be able to:
- identify the ethical issues within a discipline.
- solve an ethical problem associated with a discipline.

Global Issues
Students will be able to:
- approach global issues from multiple perspectives in deriving solutions to potential conflicts.
- critique a discipline through the lens of other cultural values.
- demonstrate a commitment to analyzing and/or solving global issues.
- demonstrate knowledge about cultures, societies, religious worldviews and /or political/economic systems outside of the western context.
- demonstrate an understanding of non-western cultures from the context of those cultures.

Social and Environmental Engagement
Students will be able to:
- identify elements of social and/or environmental structures: individual, group and system.
- demonstrate a commitment to analyzing and/or solving social and/or environmental issues.
- articulate the interrelations of natural and social-cultural systems, and the ways in which human agency can both degrade and sustain the environment.

ADDENDUM B - Conferences Attended and at which we Presented

Attended:

October 2005	AAC&U Denver, CO (Integrative Learning: Creating Opportunities to Connect) (10 attended)
November 2005	AAC&U Providence, RI (The Civic Engagement Imperative: Student Learning and the Public Good) (5 attended)
January 2006	AAC&U Washington DC (Demanding Excellence: Liberal Education in an Era of Global Competition, Anti-Intellectualism, and Disinvestment) (4 attended)
March 2006	AAC&U Phoenix, AZ (General Education and Outcomes that Matter in a Changing World) (4 attended)
April 2006	AAC&U, Seattle, WA (Learning and Technology: Implications for Liberal Education and the Disciplines) (2 attended)
June 2006	Alervno Summer Institute on Assessment, Milwaukee, WI (2 attended)

Presented:

June 2007	NEEAN Summer Institute – Ann Rancourt
November 2007	NEEAN Fall Forum – Anne-Marie Mallon, Dick Jardine, Karen Jennings
November 2007	New England Faculty Development Consortium – Sue Castriotta and Karen Stanish
January 2008	Third Annual New England SENCER Symposium – Pete Nielsen
February 2008	AAC&U General Education Conference – Anne-Marie Mallon, Melinda Treadwell, Ann Rancourt

ADDENDUM D – Assessment

In the first year of formally assessing ISP outcomes, we used direct methods (assessing student artifacts) to assess one of the criteria for writing, the quantitative literacy outcomes, and the ethics outcomes and we attempted to assess one of the criteria for critical thinking. We also used indirect methods (survey to faculty and students) to determine how transparent the outcomes were and the extent to which faculty were helping students develop program outcomes. The results follow including results from pilot assessments in 2006:

Indirect Methods

Survey Results Fall 2006:

A representative sample of students who took the pilot ITW course in fall 2006 provided the following information: Seventy-three per cent of the responding students said that the course "increased" or "greatly increased" their interest in writing. Seventy-three per cent of the respondents said that the course "increased their interest in the course topic." Eighty-one per cent of the respondents said that the course increased or greatly increased their understanding of the importance of drafting and revising their writing. Eighty-one per cent of the students said that the course helped them with coming up with a topic to write about. Eighty-seven per cent of the students said that the course helped their ability to think about their topics in an in-depth way. Ninety per cent of the students said that the course helped them revise their writing.

The following assessment activities occurred in 2007-2008. During the summer of 2007, at the end of the fall semester and during the 2008 summer three faculty reviewers created writing and critical thinking rubrics and assessed writing and critical thinking using artifacts from the ITW courses. The library created a rubric and assessed information literacy using artifacts from the Thinking and Writing course. At the end of the fall and spring semesters two reviewers assessed the quantitative literacy outcomes using artifacts from the IQL courses. At the end of the fall and spring semesters 6 reviewers assessed the ethics outcomes using artifacts from various ISP courses. Results from the assessments are guiding faculty discussions, rubric creation and revision, faculty instructional development and course/assignment revisions.

Survey Results Spring 2008

We surveyed faculty and students to determine how transparent the program outcomes were and the extent to which faculty were addressing program outcomes. The results follow:

Faculty Survey:

The survey was sent to all faculty (168) teaching in the program and 52 responded for a 31% response rate.

88% of those responding indicated that the ISP outcomes for their course were **transparent**; **84%** indicated they discussed with students **how outcomes would be addressed**; **96%** indicated they created **assignments** connected with outcomes. Regarding **skills development**, of the 8 program skill sets the **top four** faculty indicated they helped students develop were: **critical thinking (96.1%), writing (84.3%), reading (70.6%), and critical dialogue and information literacy (68.6%)**. The skill faculty helped students **least develop** was **quantitative reasoning (35.3%).** Faculty indicated they **reminded students often how to improve** their **critical**

thinking (88%) and writing (80%) skills and **least reminded** them how to improve their **quantitative reasoning skills (28%).** Regarding **perspectives outcomes**, the outcome faculty most often indicated students had a **better understanding** of (as a result of taking their course) was **language use, linguistic forms, and language's ability to change society and ourselves (54.2%).** Only **10.4%** of the faculty responding indicated that students had a better **understanding of the aesthetic and intellectual components of the fine and performing arts** as a result of taking their courses. The **integrative outcome** that faculty indicated students had a better understanding of as a result of taking their course was **social engagement (64.6%);** the outcome that faculty indicated students had the **least understanding** of was environmental **engagement (27.1%).**

Student Survey:

The survey was sent to 2682 students taking ISP courses and 152 responded for a 6% response rate.

63% of the students responding indicated they were **aware** of the **program outcomes** in their course(s); **55%** of the students indicated their professors discussed **how outcomes would be addressed**; **55%** indicated they could see how **assignments** were connected to outcomes. The **top four skills** students indicated faculty helped them develop were **critical thinking (69%), writing (66%), creative thinking (54%) and reading (45%)**; the skill students identified as professors **least helping to develop** was **technological fluency (19%).** Students felt professors **reinforced** the following skills development – **writing (53%), critical thinking (51%), reading (43%), and creative thinking (42%)**. The skill students indicated faculty **least reinforced** was **technological fluency (19%).** Students indicated that as a result of taking a course(s), they understood more about **language use, linguistic forms, and language's ability to change society and ourselves (44%).** The outcome they identified as the one they had the **least understanding about was how the scientific method differs from other modes of inquiry and ways of knowing (18%).** The **integrative outcome** students identified as the one they have a **better understanding** of was **social engagement (51%)** and the one they have the **least** understanding of was **environmental engagement (31%).**

Because we do not know in which areas faculty were teaching courses and in which areas students were taking courses, the results of this initial survey primarily provide us with initial information with which to share with faculty and students. We will likely consider revising the survey and we will plan on distributing it each semester.

Direct Methods

A. ITW ASSESSMENT REPORT Spring Pilot 2006 Submitted September 18, 2007

During the months of June 2007-September 2007, members of the subcommittee met as a group of three or team of two to initiate the assessment process for the Integrative Studies Program committee.

Charge:
Use artifacts from pilot ITW courses (Spring 07) to create a rubric. The rubric would be used to assess one or more of the skills taught in all ITW courses. Twenty randomly selected papers from

the Spring ITW courses would be the artifacts for this analysis. All three subcommittee members would be readers.

Working Assumptions:

- There will be three different conversations for which this assessment process will matter: that of the assessment committee as it creates valid rubrics for programmatic assessment of these ISP skills; that of the faculty teaching in the ISP program and seeking information about how to refine and deliver the program in their courses; that of the college community looking for information about how the program is delivering its objectives and affecting change in our students' learning.

- Students will progress from an introductory to an advanced level of intellectual development within the ISP (as they do within their major). This continuum of progress inevitably affects how we receive and use the assessment information. The data we collect will provide a baseline for later comparison and analysis.

Process:
We worked with the original language of the ISP skills outcomes. We clarified the meaning of the language used, recognizing as we worked that this language was not always clear in its original intention, was sometimes repetitive and redundant, and was inevitably tied to various disciplinary interpretations.

After considerable discussion and testing of several outcomes, we chose one writing skill outcome and one critical thinking outcome that appeared to be readily assessable. We recognized that the language of some of the skills was not, in its present form, clear enough for the assessment process.

From the Skills Outcomes of the ISP document:
Writing outcome: *Students will be able to incorporate research appropriately.*
Critical thinking outcome: *Students will be able to gather evidence, formulate conjectures, and implement alternative strategies related to a given idea, goal, problem, task or goal*.

The subcommittee created and revised both the writing and critical thinking rubrics four times, twice testing two of the rubrics through collective readings of three sample artifacts. We conceptualized the rubrics as reflecting three meta levels of proficiency that ranged from *Not Meeting* the skill expectation to *Meeting* it and then to *Exceeding* it.
We further categorized these levels of proficiency through quantifying the meaning of each level. We asked: "What does it mean when a student did not meet the outcome?" What does it mean when a student met the outcome? And "What does it mean when a student exceeded the outcome expectation?" Recognizing that the outcome could be totally absent from the artifact or present in varying degrees of proficiency, we constructed a scale of six sub-levels of proficiency, ranging from 1 (*absent*) – 6 (*highly sophisticated* use of the skill). These sublevels were framed by the meta levels: 1,2=not met expectations; 3,4=met expectations; 5,6=exceeded expectations.

Once we reached agreement on a final draft of the rubrics, each subcommittee member read copies of the same twenty papers, applying the rubrics to each artifact. We then met to share reader results. Descriptive statistics and the analysis of inter-rater reliability were calculated on the data derived from the draft of the meta-proficiency rubrics.
See attachments

Interpretation of Results for the Writing Rubric:
Estimates of inter- rater reliability range from .71 - .89 for the writing rubric, indicating a high level of reader consistency. These estimates are good. The rubric is useful for programmatic assessment (variability in the data are explained).

Most students in this sample (73%) used in-text references to sources as they developed their discussion/argument. More than one third of these students (38%) incorporated three or more scholarly in-text references to sources.

The data make clear that the majority of the first year students from the pilot ITW course recognized the need to use **multiple sources** when they do a research paper. The data also make clear that more than one-third recognized the need to use **scholarly sources** (not just popular and non-academic sources) when they do a research paper.

The principle of randomness allows us to infer that this sample is representative of the first student population at KSC.

Interpretation of Results for the Critical Thinking Rubric:
Unfortunately, the estimates of inter-rater reliability fell below accepted levels (.52) for the critical thinking rubric. Despite the fact that we defined this outcome as the "gathering and using" of information with a continuum describing gradations of this process, clearly the operational definitions were not workable.

We recognize the difficulty of assessing any skill as complex and multifaceted as critical thinking; we also believe that the lack of clarity and specificity in this particular skill outcome, as well as our own disciplinary biases, were major obstacles in our reaching consensus in our process and, obviously, in our evaluation.

Questions:

- Does the fact that these artifacts came from second semester first year students make a difference?
- If this data represent a change in first year student learning that we want to support, what needs to happen in the ITW course and in the ISP?
- Where do we want the majority of students to be as first year, second year, etc. college students?
- How do we want students to proceed through ISP from ITW programmatically?

Assessment rubric for ISP skills: Writing and Critical Thinking

READER # _____ **ARTIFACT # _____**

Writing: Incorporate research appropriately							
Skill	**1**	**2**	**3**	**4**	**5**	**6**	Rank
Research	absent	1-2 in-text references from	3-4 in-text references, but	5 or more references no	Multiple in-text references;at	Multiple in-text references	

		nonacademic, popular sites are present	no scholarly sources, are present	scholarly sources	least 1-2 are from scholarly sources	from 3 or more scholarly sources	
Incorporate appropriately	absent	Sources present but cut-and-paste	Sources present with attempt to connect to topic	Sources present and mostly connected to topic	Integrated because most sources are controlled by writer	Highly integrated with all sources controlled by writer	

Critical thinking: Gather evidence, formulate conjectures, and implement alternative strategies related to a given idea, problem task or goal							
Skill	**1**	**2**	**3**	**4**	**5**	**6**	Rank
	Absent	Evidence is present in relation to a topic.	Evidence is connected to the development of a topic.	Evidence is connected to the consistent development of a topic.	Evidence shows complexity from multiple sides; uses evidence to develop topic	Evidence changes the original topic, is highly complex, and offers alternatives	

Fall 2007 Assessment Results (ITW, IQL and Ethics)

B. Report on assessment of ITW artifacts, Fall 2007

On March 7, 2008 Dr. Karen Jennings, Associate Professor of Psychology, Dr. Beatriz Torres, Assistant Professor of Modern Languages, and Dr. Kirsti Sandy, Associate Professor of English, completed the assessment of student papers, and this is the report of that effort. This document describes the manner in which the assessment was conducted and the results of the assessment, and also provides some recommendations for improving the assessment process.

There were 841 students enrolled in ITW courses during the Fall 2007 semester. Of those, ___ submitted papers to the Blackboard site. We used a random sample of those ___ papers, selecting 74 (20% of all submitted papers) to evaluate as a representative sample.

ITW 101 focuses on four main skill areas: writing, reading, critical thinking, and information literacy. These rubrics were developed with the program outcomes in mind and they focus specifically on writing and critical thinking. A rubric for reading has been developed and student reading skill will be assessed in Fall 2008. Information literacy rubrics are currently being developed by library faculty, who, in collaboration with ITW faculty, teach research skills to ITW students.

The projects were assessed using the rubrics included in this report. (it is not clear whether ITW faculty were given copies of the rubrics—I was not here!)

Administrative Issues:

- We were hindered by the inconveniently-timed sabbatical of the current coordinator overlapping with the sabbatical of the temporary coordinator; this stalled the process and gave the group a very late start date (after January 14th). Therefore, assessment that should have been accomplished over winter break did not begin until after winter break, when the spring semester had begun.

- We did not have the privilege of continuity between readers. Two of last summer's readers stepped down and two new readers were in their place—readers who needed to learn the rubrics and who were asked to revise the rubrics as well.

- Initially, each reader was provided a different set of papers. We realized the error early on, but we used those to practice using the rubrics and to help us refine the rubrics.

- A number of students failed to submit their papers to Blackboard (--- of – did not). We will need to ensure more compliance in the future.

- Several students failed to include a works cited or reference page, which made it difficult for readers to tell whether or not these sources were academic/scholarly sources.

- (How was the process of retrieving the documents? I wasn't here)

- Conducting the assessment took ___ hours of faculty time. Reading 74 20-page papers is staggeringly time-consuming, particularly once the semester is in full swing. We need to reduce the number of our random sample, or risk losing all potential readers.

Norming session:

- We did not have an official norming session, which we will need to have this summer to ensure that readers are interpreting the rubrics in the same way. However, we did discuss the criteria as a team,using the first set of sample papers. Next time, we need to compare results more carefully.

- We realized the need, at one point, to revise the critical thinking rubrics, as they were difficult to use. The ITW Subcommittee came up with a new rubric, which we then used.

Comments on the projects:

- Not all of the projects appeared to meet the course outcomes. A few of the papers contained no research and consisted mostly of personal stories.

- Several of the papers seemed to indicate that the students were paraphrasing without explicitly attributing a source.

- Despite the faculty development opportunities ITW faculty have been given, and despite a tight cohort, there are still many discrepancies between papers. It is clear that while many are assigning papers consistent with the course outcomes, others are not. The same faculty members avail themselves of these opportunities however, and it may be that the ones who do not become disconnected from the goal and purpose of the course. What is the incentive for faculty who already fulfilled their "official" faculty development obligations to continue attending meetings and working on their courses?

- Many of the papers did not have a thesis or claim and appeared to be "reports"—compilations of material not necessarily tied together in any meaningful way. Although the course outcomes clearly emphasize writing with purpose and stating and developing complex claims, many of the claims that students made were overly simple, indicating that ITW may need to emphasize more clearly what it means to write about a topic in depth.

Clearly, we have a great deal of work to do before we are able to effectively and accurately assess the ITW 101 outcomes. Clearer outcomes, norming sessions, better procedures for submitting papers, and a consistent assessment team are all needed. The ITW Subcommittee needs to be a part of the process of constructing rubrics and approving rubrics for the course. This summer, two members of the subcommittee will serve as readers: Phyllis Benay and Judy Hildebrandt. Beatriz Torres, who read the artifacts from the spring, will be the third member of the team.

C. Report on the IQL 101 Integrative Quantitative Literacy Pre-Test and Post-Test, Fall 2007

BACKGROUND

In the spring of 2007, three sections of IQL 101 were offered as a pilot for the Integrative Studies Program. In that pilot, a pre-test consisting of 5 attitudinal questions and 3 skill-based questions were given to the students during the second week of classes. The same test was given as a post-test during the last week of classes. Results showed that students' correct responses increased from the pre-test to the post-test. (See Appendix A for details.) Since the results were positive, the decision was made to continue using this form of program assessment as well as expand it to include other outcomes for the fall 2007 semester.

FALL 2007

The fall 2007 semester was the first semester of the Integrative Studies Program and the first time that IQL 101 was taught on a large scale (17 sections vs. 3 sections taught in the pilot). The pre-test and post-test were given again to the students enrolled in IQL 101. Students were not asked to put their name or student id number on the answer sheet. The attitudinal questions remained the same, but the skill-based questions were expanded to consist of 15 questions that directly related to the Quantitative Literacy (QL) Outcomes. Four of the seven QL outcomes were chosen to be assessed on the test (see Appendix B for the list of QL outcomes). For each outcome, three specific criteria were created to determine if the students had met that outcome. A skill-based question was created for each criteria, except for one of the outcomes, "critically read and interpret a quantitative problem," had two questions per criteria because this is a particular area of weakness for students.

The tables that follow below show the QL outcome, the criteria that was being tested, and how students performed on the pre-test and post-test during fall 2007. There were 393 students who completed the pre-test and 297 students who completed the post-test. The completion rate for the post-test is lower due to the following reasons; students dropped the course, students were absent on the day the post-test was given and not all faculty members teaching IQL 101 returned the post-tests. Interestingly, the item analysis found in the tables does not always show improvement from the pre-test to the post-test. For seven of the items, the scores increased and for eight of the items, the scores decreased. However, the change in scores was not significant enough to gain insight into the success the QL course had on the students' ability to meet the QL Outcomes assessed on this testing instrument.

OUTCOMES, CRITERIA, AND PERCENT ANSWERED CORRECTLY

See Appendix C for the questions referred to below.

1. Use basic numerical summary measures to analyze data.

a) Students will calculate the mean, median, mode, and range of a data set.

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	7	393	334	85.0%
Post-test F'07	7	297	249	83.8%

b) Students will explain what the standard deviation tells them about given data.

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	16	393	99	25.2%
Post-test F'07	16	297	126	42.4%

c) Students will determine whether the mean, median, or mode better represents given data.

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	9	393	86	21.9%
Post-test F'07	9	297	84	28.3%

2. Read and interpret visually represented data.

a) Students will read specific information (e.g., frequencies, percentages, associated values, etc.) from a graph or chart.

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	6	393	233	59.3%
Post-test F'07	6	297	157	52.9%

b) Students will make accurate "big picture" conclusions (e.g., relationships, trends, predictions) based on a visual representation of data.

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	13	393	284	72.3%
Post-test F'07	13	297	223	75.1%

2. Read and interpret visually represented data.

c) Students will compare two visual representations of the same data to determine which is more effective.

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	15	393	314	79.9%
Post-test F'07	15	297	247	83.2%

3. Distinguish among various types of growth models (e.g., linear, exponential) and the types of situations for which the models are appropriate.

a) *Students will determine if the subject being modeled is linearly increasing or decreasing.*

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	8	393	152	38.7%
Post-test F'07	8	297	123	41.4%

b) *Students will determine if the subject being modeled is exponentially increasing or decreasing.*

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	14	393	230	58.5%
Post-test F'07	14	297	189	63.6%

c) *Students will determine whether a linear or exponential model is better for a given situation.*

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	17	393	238	60.6%
Post-test F'07	17	297	174	58.6%

4. Critically read and interpret a quantitative problem.

a) *Students will distinguish between given information and unknowns in a quantitative problem.*

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	10	393	274	69.7%
Post-test F'07	10	297	193	65.0%
Pre-test F'07	18	393	324	82.4%
Post-test F'07	18	297	225	75.8%

b) *Students will identify appropriate processes or calculations for solving a quantitative problem.*

	question #	# of students	# of students who answered correctly	% of students who answered correctly

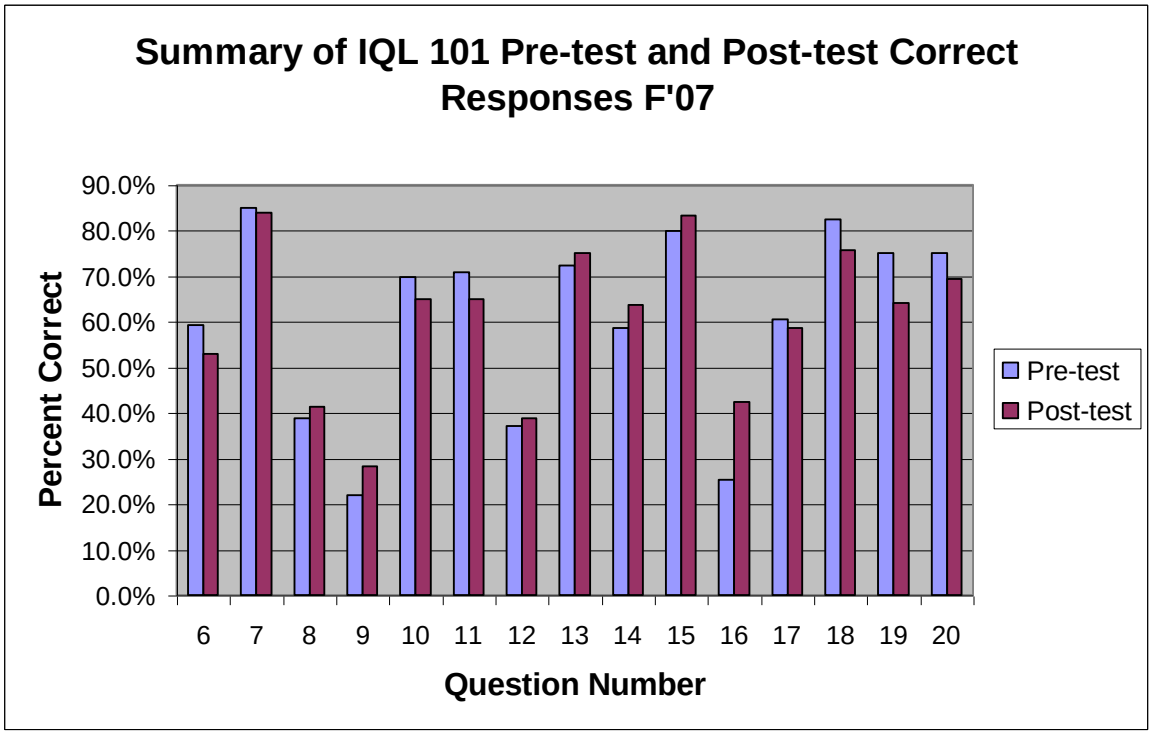
Pre-test F'07	11	393	278	70.7%
Post-test F'07	11	297	193	65.0%
Pre-test F'07	19	393	295	75.1%
Post-test F'07	19	297	190	64.0%

c) *Students will interpret the results of calculations within the context of a given problem situation.*

	question #	# of students	# of students who answered correctly	% of students who answered correctly
Pre-test F'07	12	393	146	37.2%
Post-test F'07	12	297	115	38.7%
Pre-test F'07	20	393	295	75.1%
Post-test F'07	20	297	206	69.4%

SUMMARY OF PERCENT ANSWERED CORRECTLY

Below is a bar graph showing the combined data found in the tables on pages 2 – 4. This gives a visual representation of the data and shows at a glance that for approximately half the questions a higher percentage of students answered them correctly on the post-test, while the other half a lower percentage of students answered them correctly on the post-test.



Looking more closely at the questions for which students' success rate increased, it seems they are understanding the following concepts more clearly: linear and exponential growth, using a trend line to predict future data, using the most appropriate average and graph for given data, and the meaning of standard deviation.

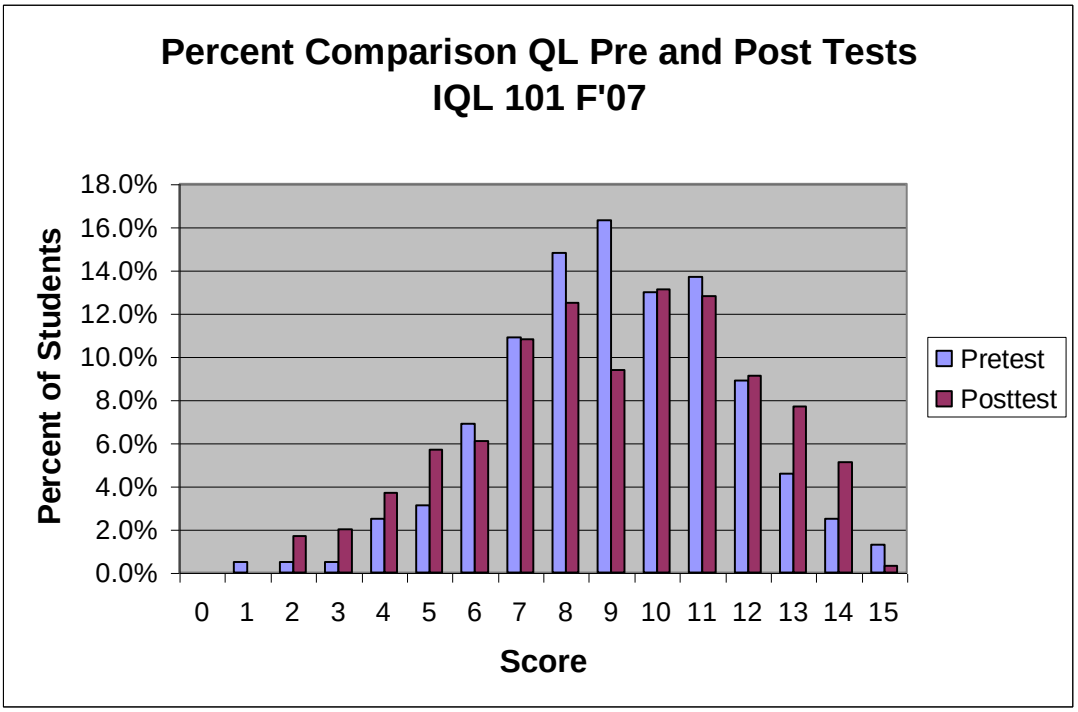
Looking at the questions that dropped in student success rate, there seems to be the following common weaknesses: evaluating a formula given values for the variables, reading a word problem and executing what is asked, interpreting information given in a graph to answer a question, looking at a relationship between two variables and surprisingly, finding the mean of a list of numbers.

Interestingly, the concepts for which students improved on are actually more the "habits of mind" type of questions that requires students to think more conceptually about the quantitative information presented to them. Whereas, the weak areas seem to be more the "plug and chug" type of problems one would traditionally find in a mathematics classroom. Perhaps the test questions need to be modified to focus less on mathematical calculations and more on understanding quantitative information.

SUMMARY OF SCORES RECEIVED

(See Appendix D for raw scores and percentages.)

Below is a bar graph showing the combined scores students received on the pre-test and post-test during the fall of 2007. The maximum score a student could receive was 15 and the minimum was 0.



In comparing this data one would hope that the higher scores were obtained by a greater number of students on the post-test than on the pre-test. This is true for scores greater than 70% and greater than or equal to 80%. On the pre-test, 31.0% of the students received a score greater

than 70% and on the post-test that score was obtained by 35.0% of the students. On the pre-test, 17.3% of the students received a score greater than or equal to 80% and on the post-test that score was obtained by 22.2% of the students. These results seem to indicate that a small portion of the students improved their understanding of the quantitative literacy concepts throughout the semester.

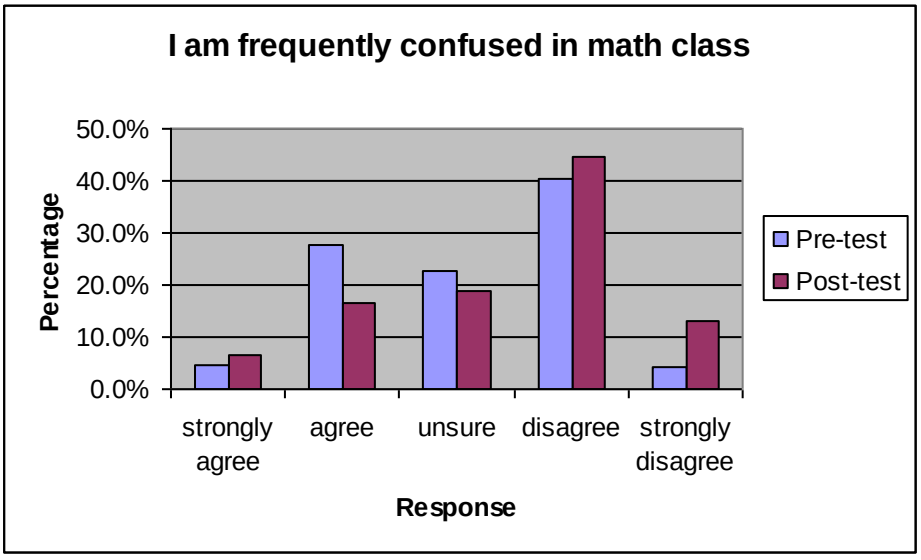
Interestingly, the mean and median for both the pre-test and the post-test is a score of 9 out of 15 (60%). The mode increased from a score of 9 on the pre-test to a score of 10 out 15 (67.7%) on the post-test. Once again, one would hope that these averages would increase after a semester of studying quantitative literacy. However, one could argue that if students are weak at the beginning of the semester it will take more than a semester to help improve their understanding.

ATTITUDINAL RESULTS

The following tables and graphs show student responses on the attitudinal questions asked on the pre-test and post-test in the fall of 2007. These results seem to be positive in that students' attitudes have changed slightly after taking a semester course on quantitative literacy. Students felt less confused, more confident and less insecure in their ability to do mathematics. Some found mathematics more interesting while most did not change their view on whether mathematics was a worthwhile or necessary subject.

Question 1: I am frequently confused in my math class.

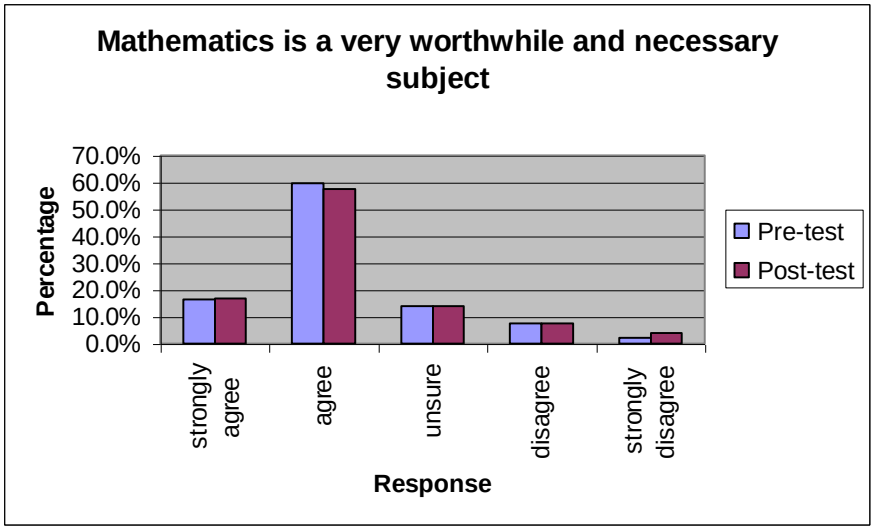
	strongly agree	agree	unsure	disagree	strongly disagree
Pre-test F'07	4.8%	27.7%	22.6%	40.5%	4.3%
Post-test F'07	6.7%	16.5%	18.9%	44.8%	13.1%



Question 2: Mathematics is a very worthwhile and necessary subject.

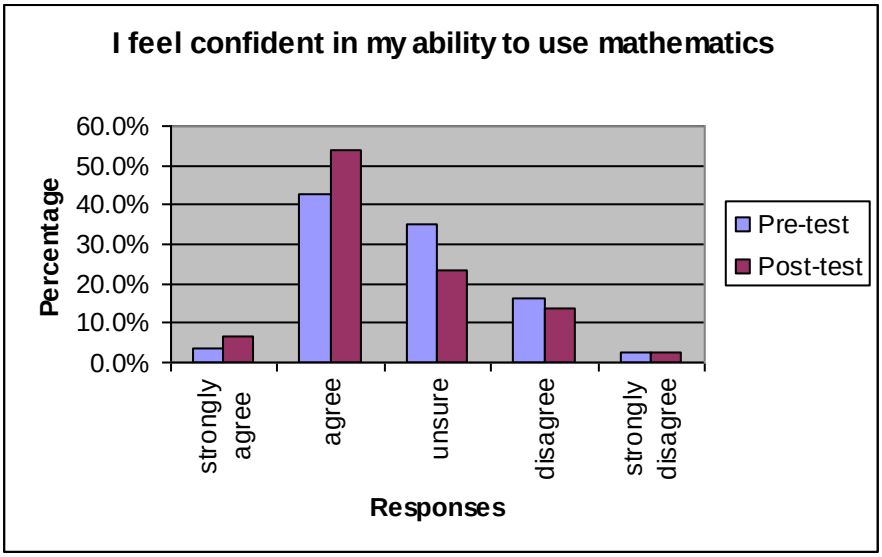
	strongly agree	agree	unsure	disagree	strongly disagree
Pre-test F'07	16.5%	59.8%	14.0%	7.6%	2.0%

Post-test F'07	16.8%	57.6%	14.1%	7.4%	4.0%



Question 3: I feel confident in my ability to do mathematics.

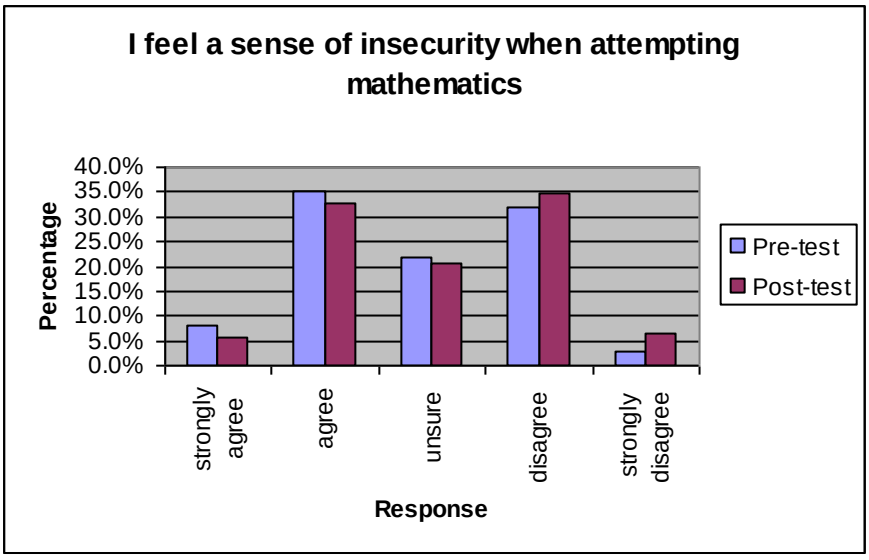
	strongly agree	agree	unsure	disagree	strongly disagree
Pre-test F'07	3.6%	42.7%	35.1%	16.3%	2.3%
Post-test F'07	6.4%	53.9%	23.6%	13.8%	2.4%



Question 4: I feel a sense of insecurity when attempting mathematics.

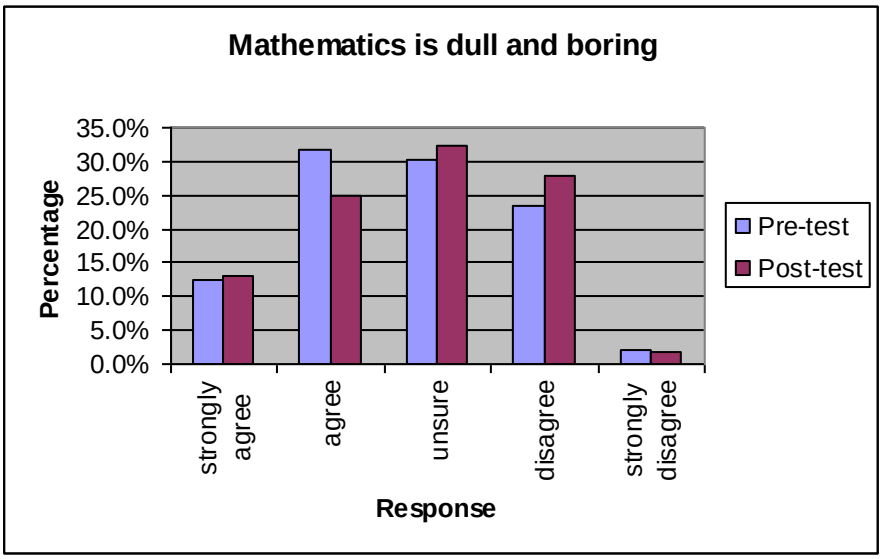
	strongly agree	agree	unsure	disagree	strongly disagree
Pre-test F'07	8.1%	35.1%	21.9%	32.1%	2.8%

Post-test F'07	5.7%	32.7%	20.5%	34.7%	6.4%



Question 5: Mathematics is dull and boring.

	strongly agree	agree	unsure	disagree	strongly disagree
Pre-test F'07	12.5%	31.8%	30.3%	23.4%	2.0%
Post-test F'07	13.1%	24.9%	32.3%	27.9%	1.7%



RECOMMENDATIONS

Based on the data collected and analyzed, the following recommendations are being made in regards to:

Assessment of the Assessment Instrument

- Keep the same pre-test and post-test for the spring 2008 semester. After analysis of the results from those two tests, revisit the test questions and revise accordingly.
- Consider taking a random sample of the pre-tests and follow those same students on the post-test.
- Acquire technology to process and analyze the data.
- Further discussion needs to take place about the administration of the pre-test and post-test.

Assessment of Student Learning in IQL 101

- Emphasize the need for students to have multiple experiences with each of the QL outcomes while taking the IQL 101 course.
- Emphasize the need to continue exposing students to quantitative information in future ISP courses.

Quantitative Literacy Outcomes

Students will be able to:

- apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.
- use appropriate software to create spreadsheets, tables, graphs and charts.
- read and interpret visually represented data.
- distinguish among various types of growth models (e.g., linear, exponential) and the types of situations for which the models are appropriate.
- critically read and interpret a quantitative problem.
- pose a question in the form of a mathematical model in order to solve the problem.
- apply prior knowledge to solve a new problem.

D. Report on assessment of QL Student Projects, Fall 2007

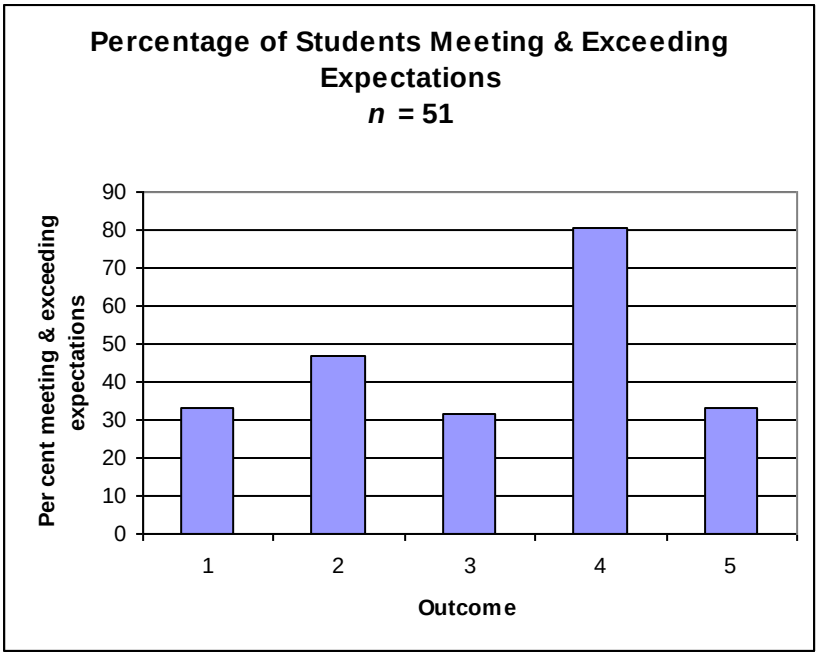
On January 16 and 17, Dr. Olga Chuyan, Adjunct Professor of Mathematics, and Dr. Dick Jardine, Associate Professor of Mathematics, completed the assessment of student projects, and this is the report of that effort. This document describes the manner in which the assessment was conducted and the results of the assessment, and also provides some recommendations for "close the loop" actions.

According to information provided by the *Bb* administrator, there were 401 students enrolled in QL courses during the Fall 2007 semester. Of those, 283 submitted projects to the *Bb* site. We used a simple random sample of those 283 student projects, selecting 57 projects to evaluate as a representative sample considering that we were estimating the proportion of projects that would meet or exceed expectations in completing course outcomes.

The projects were assessed using the rubrics included as Appendix A, and more specifically using the checklist at Appendix B. The rubrics were tailored to match the approved student learning outcomes to be addressed by students in the projects. As part of their QL faculty development, QL faculty members were informed of the learning outcomes to be assessed on the projects and were provided copies of the rubrics. In a very real sense, the rubrics help us to understand what is meant by each of the outcomes, and define what is meant for a student to meet or exceed expectations for the outcome and for the project. At the top of the next page is a table (TABLE 1) summarizing the numerical results of the assessment of the respective learning outcomes.

TABLE 1 Assessment results **Outcome:**	**Needs improvement**	**Met expectation**	**Exceeded expectation**	**% Met/Exc**
1. Apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.	34	17	0	33
2. Use appropriate software to create spreadsheets, tables, graphs, and charts.	27	24	0	47
3. Read and interpret visually represented data.	35	16	0	31
4. Apply prior knowledge to solve a new problem.	10	41	0	80
5. Overall project assessment	34	17	0	33

The graph below depicts the same data, showing the percentage of student projects that met or exceeded expectations. In this assessment, no student projects exceeded expectations. The numbers below the bars correspond to the respective numbers of the outcomes in TABLE 1 above. It is clear from the graph and the table that the projects met expectations at a high rate for one outcome but did not in the others.



It is clear from the evaluation of the student projects that most students met expectations at a reasonably high level (80%) on the outcome addressing the students' ability to apply quantitative skills to the context of their course. The assessment also indicates that most of the projects did not address the other three outcomes at a level deemed sufficient to meet expectations as described in the rubric, if they were addressed at all. In general, two-thirds of the projects failed to meet expectations, for reasons described in the comments that follow.

The items in the following bulleted lists are observations made in the process of conducting the assessment of the QL projects. The observations are categorized as administrative, calibration (evaluator training and coordination), and general project comments.

Administrative issues:

- Not all students submitted projects to the Bb site (116 of 401 did not). This tended to skew the results. For example, the students of one faculty member who taught three sections of QL submitted projects, so those sections were over-represented in the sample.
- Two students projects submitted were identified as "In progress" on the Bb site, which really meant they were not available for assessment.
- Of the 283 that did submit, a simple random sample of 57 was chosen. This number was based on the assumption that the desired population parameter was a proportion and that the expected proportion was 0.7 (or 70%) of the projects would meet or exceed expectation.
- Retrieving the projects from Bb is a time-consuming process—the first 5 took well over a half hour due to file conversions, numbering, multiple files per student, consulting the Bb administrator and the Helpdesk, dealing with corrupt student files, etc. It takes a while to get into the rhythm, and overall it took hours.
- One student submitted 21 separate files—scans, spreadsheets, etc., with no connecting document or key.
- To conduct the assessment took at least 16 hours of faculty time.

Calibration session:

- Having little experience with grading from a rubric of this nature, it took some adjustment for one faculty member to evaluate using the rubric criteria rather than preconceived values.
- It took reading 7 projects over 1½ hours before we felt comfortable that we would evaluate consistently and similarly. We started by assessing several projects together, then switched to evaluating separately and comparing results.

Comments on the projects:

- It is clear that some project assignments did not require students to demonstrate proficiency in meeting the designated learning outcomes.
    - Projects contained no graphs and/or very little statistical work with discussion
    - Projects contained no analysis of statistics/graphs produced by software, or no evidence of software usage.
- Student analysis of graphs or numerical statistics was often weak or non-existent. In some cases, it was apparent that students can "do the math", but have difficulty describing what the resulting numbers mean.
- Many projects had pages and pages of *Excel* output with no discussion, not even mention, of the reason why the spreadsheets were included.
- One student submitted a *PowerPoint* presentation, another an *Excel* file with only statistics and graphs—no explanations! Some student submissions were incomplete, as they mistakenly submitted a portion of the project submission and were subsequently unable to upload all they intended.

Based on those observations, the following recommendations are offered to close the loop.

- A proposed additional learning objective for the foundations courses is that students learn to compile a coherent electronic document. That would require some administrative instruction (perhaps an online *Bb* course/tutorial?) that would help students learn to cut-and-paste figures, graphs, spreadsheet output into a single *Word* document, or create one .pdf file from multiple sources. That is an important skill for life outside the college, as well as inside.

- Faculty teaching the QL course should be well-versed in the QL outcomes and be mindful of those outcomes when designing project requirements and other course activities. Some faculty members are clearly already doing so, as demonstrated by the projects on baseball and on Africa, among others. Our faculty members have demonstrated they are very capable of designing assignments which effectively address the QL outcomes; more faculty development will help those who are not yet comfortable connecting learning outcomes to pedagogical practices.
- There is a wide range in the nature of the quantitative experience students are getting in a QL course—some are getting a full-blown introductory statistics experience, the rest are getting something less, and in some cases much less. This is connected to the recommendation above, in which QL faculty development helps instructors understand that students are to be challenged to meet *all* the QL outcomes and skills at some point in the course.
- The assessment process could be administratively expedited if there was some quality control on the project submissions (ensuring that all submissions are in an uncorrupted format, increasing the number of students submitting projects, "mistake-proofing" upload instructions, etc.) and if the sample was determined and projects printed prior to faculty evaluators becoming involved.

In summary, this assessment reveals more about our process rather than what students have learned in their QL courses, but that is to be expected in a new program. The assessment was "doable" in a reasonable amount of time by faculty. We validated the viability of the electronic submission process, although there are some bugs to eliminate. Including an adjunct in the assessment process was important as adjuncts are bearing a large load in QL instruction at KSC. Faculty have much to learn about including projects (in some sense, technical writing) as a learning vehicle in QL courses. Students must be challenged in QL courses to not only compute statistics and create graphs, but interpret what the specific statistics mean and what the graphs reveal. Continued faculty development and administrative support can close the loop to improve the current QL program.

Respectfully submitted,

Dick Jardine

Appendix A-1

IQL 101
Project Evaluation Rubric

	Needs Improvement	**Met Expectation**	**Exceeded Expectation**
Apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.	Pictorial representation or numerical summary measures not included, inappropriate, or not used in a meaningful way. No discussion of the graphical or numerical representations included in the text.	Both an appropriate pictorial representation and an appropriate numerical summary measure included and used in meaningful ways. Discussion of the graph(s) or numerical measures included.	Appropriate pictorial representations and numerical summary measures are used and discussed effectively to support conclusions.
Use appropriate software to create spreadsheets, tables, graphs, and charts.	No or inappropriate tables, graphs, or charts. Tables, charts, or graphs incorrectly labeled.	Software is used to tabulate numerical computations and to create an appropriately labeled graph or chart.	Software used to tabulate numerical computations. Incorporates appropriately labeled graphs or charts in a creative and effective way.
Read and interpret visually represented data.	Inaccurate or missing interpretation of visually represented data.	Accurate interpretation of visually represented data.	Accurate interpretation of visually represented data and clear, concise explanation of the interpretation.
Apply prior knowledge to solve a new problem.	Weak or no connection to information learned in the course. Quantitative language used incorrectly. Weak or no synthesis of quantitative and contextual aspects of the course.	Connection to information learned in the course. Quantitative language used correctly. Synthesized quantitative and contextual aspects of the course.	Extended information learned in the course. Used quantitative language correctly. Synthesized quantitative and contextual aspects of the course.

Appendix A-2

Needs Improvement Contains many of the following
Pictorial representation or numerical summary measures not included, inappropriate, or not used in a meaningful way. No discussion of the graphical or numerical representations included in the text. No or inappropriate tables, graphs, or charts. Tables, charts, or graphs incorrectly labeled. Inaccurate or missing interpretation of visually represented data. Weak or no connection to information learned in the course. Quantitative language used incorrectly. Weak or no synthesis of quantitative and contextual aspects of the course.
Met Expectation Does most or many of the following
Both an appropriate pictorial representation and an appropriate numerical summary measure included and used in meaningful ways. Discussion of the graph(s) or numerical measures included. Software is used to tabulate numerical computations and to create an appropriately labeled graph or chart. Accurate interpretation of visually represented data. Connection to information learned in the course. Quantitative language used correctly. Synthesized quantitative and contextual aspects of the course.
Exceeded Expectation Consistently does all or most of the following
Appropriate pictorial representations and numerical summary measures are used and discussed effectively to support conclusions. Software used to tabulate numerical computations. Incorporates appropriately labeled graphs or charts in a creative and effective way. Accurate interpretation of visually represented data and clear, concise explanation of the interpretation. Extended information learned in the course. Used quantitative language correctly. Synthesized quantitative and contextual aspects of the course.

Appendix B
QL Outcomes Project Assessment Project Number _____

Evaluator Initials _____

Outcome	Needs Improvement	Met Expectation	Exceeded Expectation
Apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.			
Use appropriate software to create spreadsheets, tables, graphs, and charts.			
Read and interpret visually represented data.			
Apply prior knowledge to solve a new problem.			
Overall Project Assessment			

Evaluator comments:

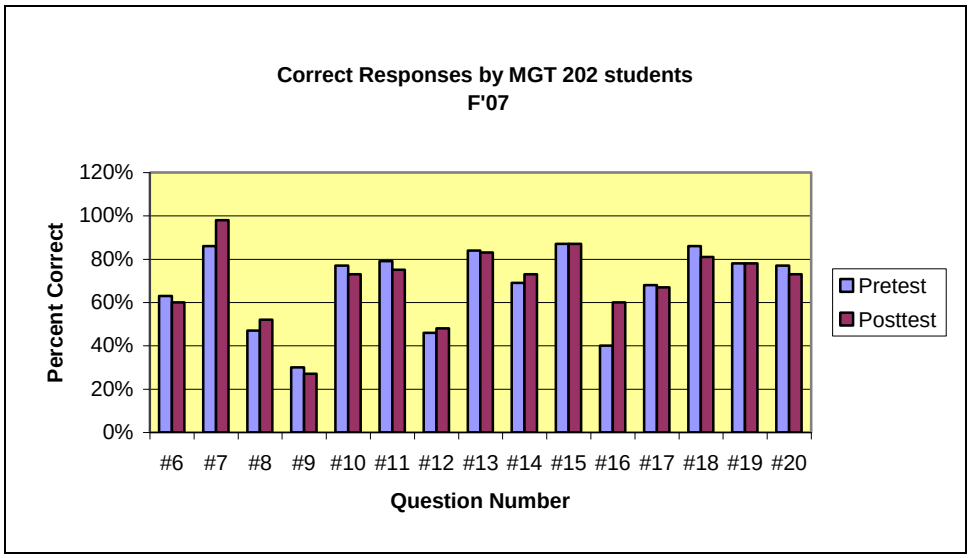
E. Addendum to the Report on the Results of the Quantitative Literacy Pre-test and Post-test Fall 2007 submitted May 15, 2008

Comparison of the Quantitative Literacy Pre-test and Post-test given to IQL 101 and MGT 202 students F'07

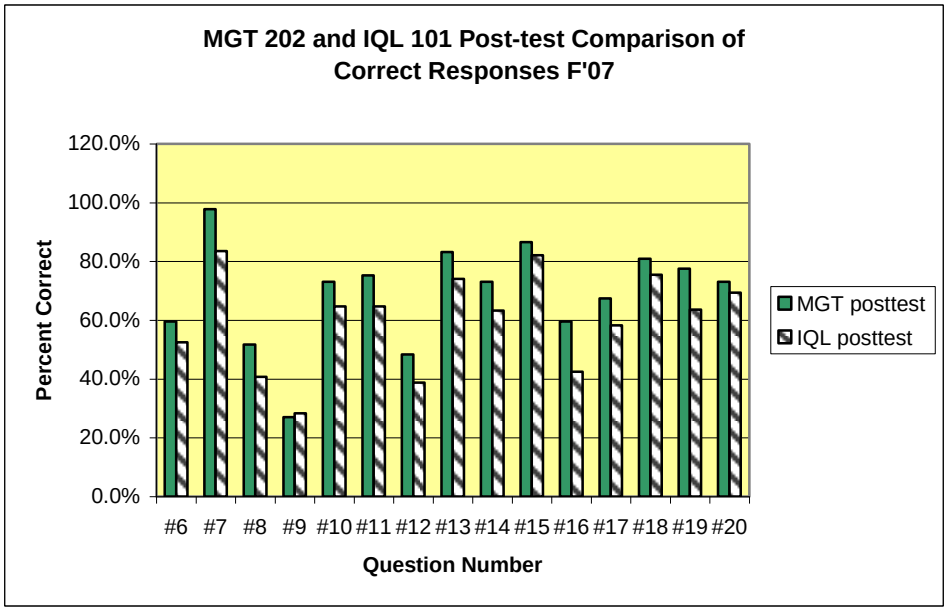
In the fall of 2007, *MGT 202 Quantitative Decision Making* was considered an alternative course to *IQL 101 Integrative Quantitative Literacy*. In an attempt to show that *MGT 202* is a viable Quantitative Literacy course, the pre-test and post-test were given to students enrolled in all sections of *MGT 202*. The students in these courses were not all first year students as *IQL 101* courses were during the fall of 2007. Students were not asked to put their name or student id number on the answer sheet. There were 5 attitudinal questions asked and 15 skill-based questions asked that directly related to the Quantitative Literacy (QL) Outcomes.

The bar graph below shows how the *MGT 202* students performed on the pre-test and post-test during fall 2007. There were 91 students who completed the pre-test and 89 students

who completed the post-test. The graph shows that overall there were no significant changes in the students' ability to answer the questions given on the assessment instrument.

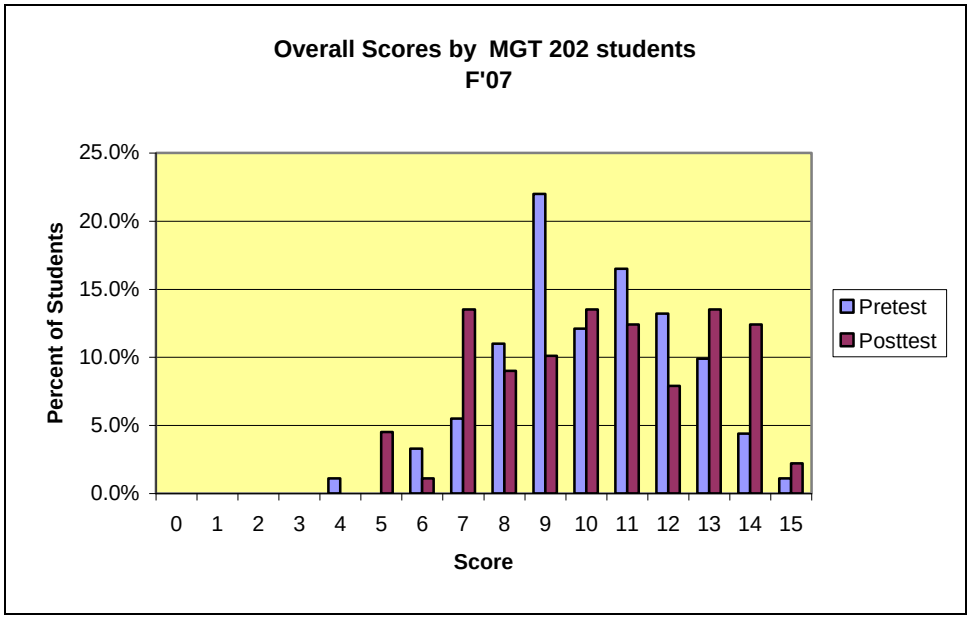


The students in *MGT 202* were slightly, but not significantly, more successful in answering the post-test questions than students in *IQL 101*. Below is a graph of the percent of correct responses on the post-test for both *MGT 202* and *IQL 101* students.

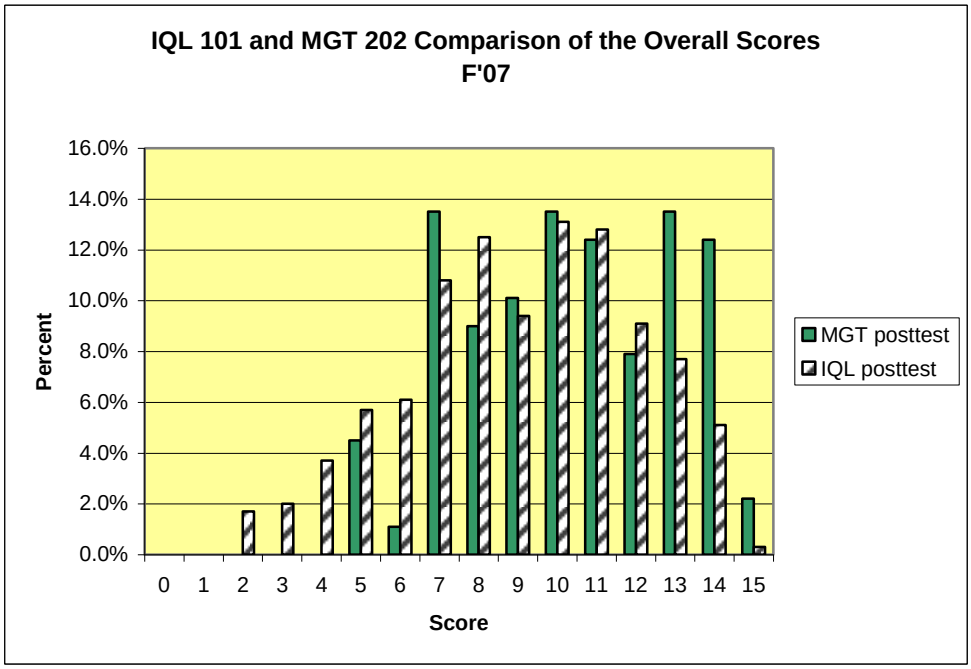


The bar graph below shows the overall percentage of *MGT 202* students' scores on the pre-test and post-test. The graph shows that the number of students in *MGT 202* correctly answering 13 or more questions increased from the pre-test to the post-test. On the pre-test, 45.1% of the students received a score greater than 70% and on the post-test that score was obtained by 48.3% of the students. On the pre-test, 28.6% of the students received a score greater than or equal to 80% and on the post-test that score was obtained by 36.0% of the students.

These results seem to indicate that a small portion of the students improved their understanding of the quantitative literacy concepts throughout the semester.



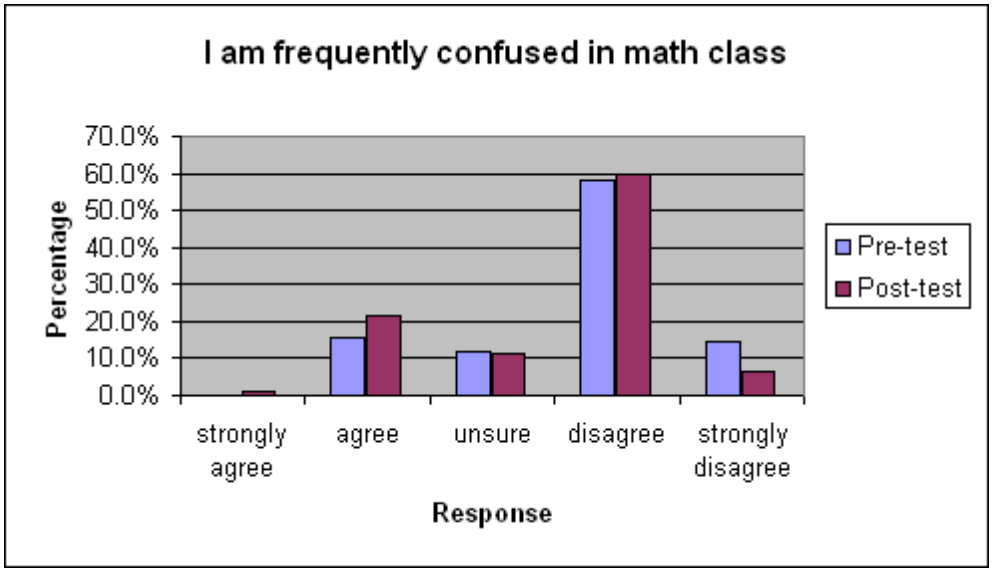
Below is a graph of the comparison of the students' overall scores. The students in *MGT 202* had comparable scores with the scores of students in *IQL 101*. However, *MGT 202* students received more scores of 13, 14 and 15 than the *IQL 101* students did.



The tables and bar graphs that follow contain the *MGT 202* students' responses to the attitudinal questions on the pre-test and post-test given in the fall of 2007. There were only slight changes in the students' attitudes about mathematics, but no trends that say students' attitudes were positively affected.

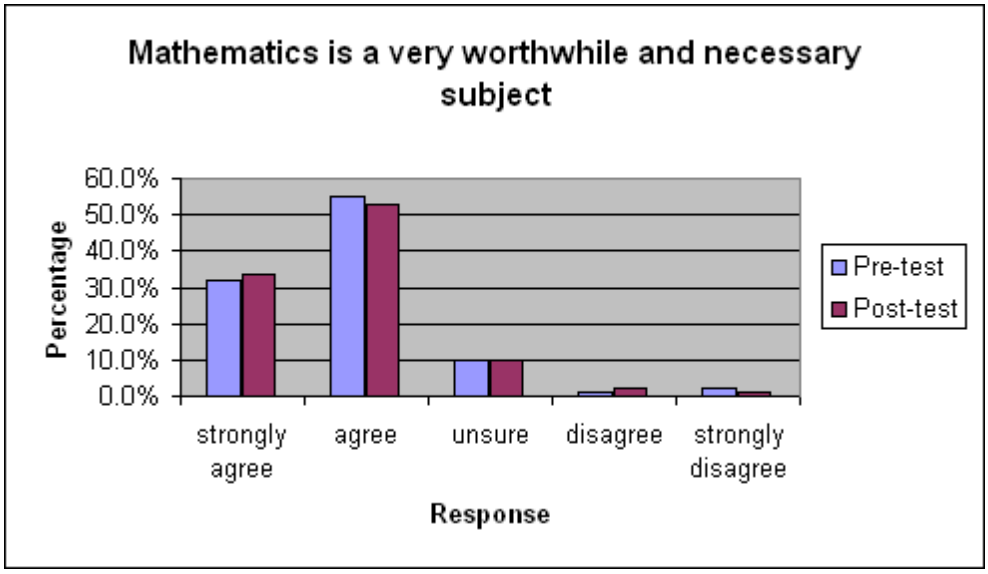
Question 1: I am frequently confused in my math class.

	strongly agree	agree	unsure	disagree	strongly disagree
MGT Pre-test F'07	0.0%	15.4%	12.1%	58.2%	14.3%
MGT Post-test F'07	1.1%	21.3%	11.2%	59.6%	6.7%



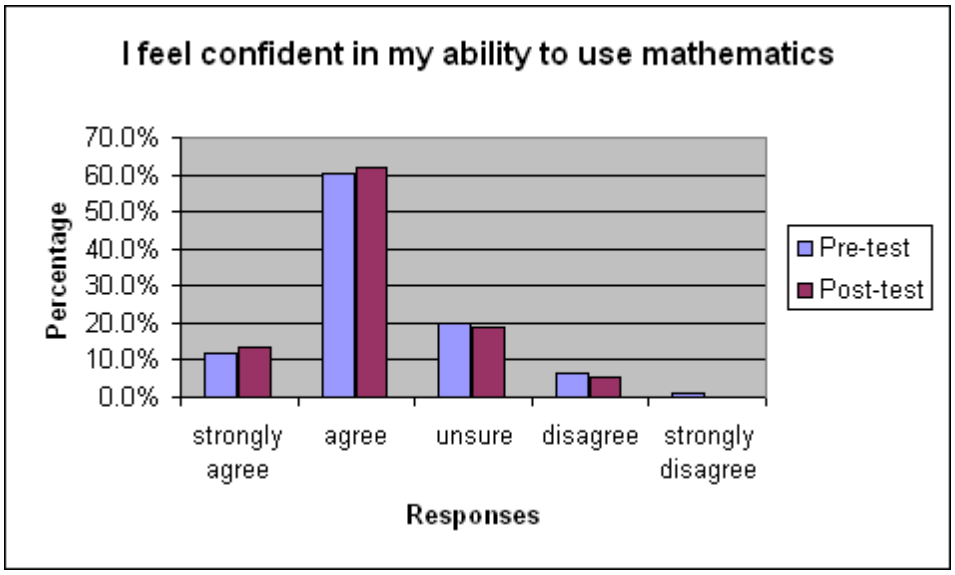
Question 2: Mathematics is a very worthwhile and necessary subject.

	strongly agree	agree	unsure	disagree	strongly disagree
MGT Pre-test F'07	31.9%	54.9%	9.9%	1.1%	2.2%
MGT Post-test F'07	33.7%	52.8%	10.1%	2.2%	1.1%



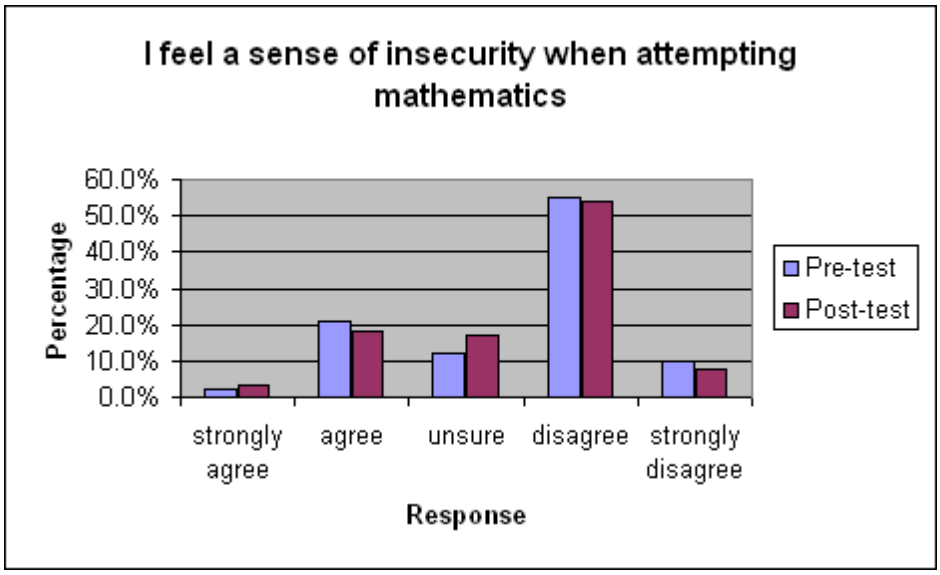
Question 3: I feel confident in my ability to do mathematics.

	strongly agree	agree	unsure	disagree	strongly disagree
MGT Pre-test F'07	12.1%	60.4%	19.8%	6.6%	1.1%
MGT Post-test F'07	13.5%	61.8%	19.1%	5.6%	0.0%



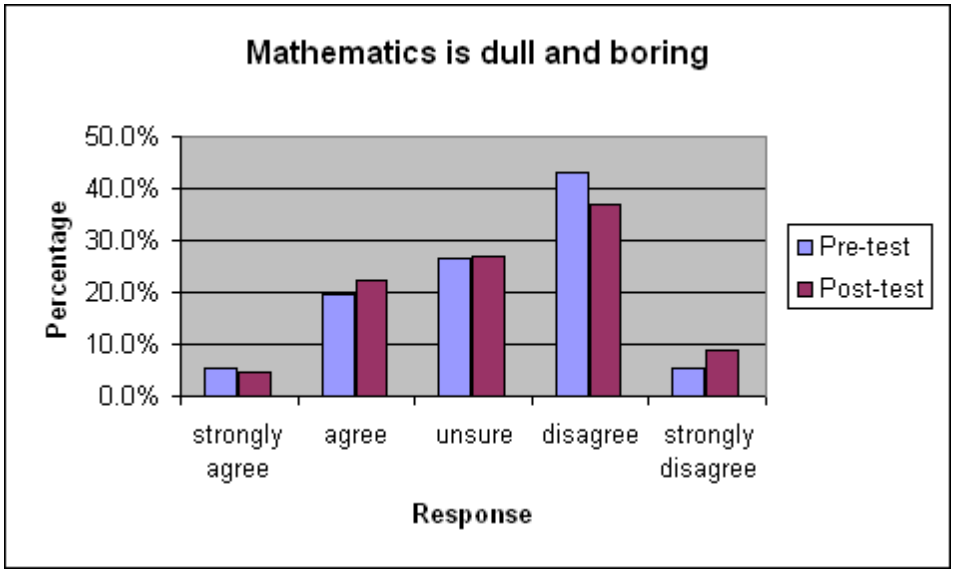
Question 4: I feel a sense of insecurity when attempting mathematics.

	strongly agree	agree	unsure	disagree	strongly disagree
MGT Pre-test F'07	2.2%	20.9%	12.1%	54.9%	9.9%
MGT Post-test F'07	3.4%	18.0%	16.9%	53.9%	7.9%



Question 5: Mathematics is dull and boring.

	strongly agree	agree	unsure	disagree	strongly disagree
MGT Pre-test F'07	5.5%	19.8%	26.4%	42.9%	5.5%
MGT Post-test F'07	4.5%	22.5%	27.0%	37.1%	9.0%



Conclusion

The students taking *MGT 202 Quantitative Decision Making* in the fall of 2007 scored 13 or higher on the Quantitative Literacy Post-test more frequently than *IQL 101 Integrative Quantitative Literacy* students in the same semester. However, the results in general did not indicate a difference in performance between the two groups of students. Since there was no significant difference in the performance of *MGT 202* students from their *IQL 101* counterparts, *MGT 202* seems to be a viable alternative to *IQL 101*.

F. Ethics Assessment Fall 2007
Submitted December 17, 2007

Part I: Learning Outcomes

A. Learning Outcomes being Assessed

Current Ethics Outcomes

Students will be able to:

- identify the ethical issues within a discipline.
- solve an ethical problem associated with a discipline.

Revised Ethics Outcomes following Fall 07 Ethics Roundtable discussions

Students will be able to:

A. identify ethical issues within a content area
   This includes:
      demonstrating an understanding of the difference between factual and ethical claims

B. critically analyze ethical arguments
   This includes:
      identifying influential arguments on various sides of an issue
      giving *reasons* to support their own conclusions
      anticipating and responding to likely objections to those conclusions

Part II: Processes

A. Rubrics for Measuring Learning Outcomes

Rationale for this type of rubric: We wanted an assessment tool that captured the core objectives of the Ethics outcome, while recognizing that different courses may incorporate ethics into their curriculum in different ways. We also wanted a tool that could assess different forms of student work, including essays, presentations, and class discussions.

Identifying ethical issues and critically analyzing ethical arguments seemed to be two broad categories of skills that are closely tied to understanding and participating in ethical debates and decisions. Thus, these broad categories were listed as Outcomes A and B below. The questions within each category were an attempt to identify specific aspects of the general skill of that category.

How this worked: We collected random samples of student work from each course with Ethics as an outcome. The samples submitted were drawn from assignments that we had identified as relevant to the Ethics outcome. Outcomes A and B could also be assessed separately, if an instructor has chosen just one of the Ethics outcomes for the course.

On a scale from 1 to 3, we evaluated the extent to which the student fulfilled the criteria in the questions.

1 = No, did not meet expectation
2 = Yes, met expectation
3 = Yes, exceeded expectation

The scores were added up, with the end result being a single numerical score for each work assessed. These scores could be averaged, broken down by part (A or B) or by question, etc., so they would help identify overall strengths or weaknesses in the program.

Key:	1……..…..2…….……3		
	No, did not meet expectation	Yes, met expectation	Yes, exceeded expectation

Outcome A. Identifying Ethical Issues Within A Content Area

Assessment Question	Score
Does the student identify an ethical question or issue?	
Does the student demonstrate an understanding of the difference between factual and ethical claims – i.e., does the student recognize that *descriptive* claims (about what *is* the case) do not necessarily establish *proscriptive* claims (about what *ought* to be the case)?	
Outcome A Total	

Outcome B. Critically Analyzing Ethical Arguments

Assessment Question	Score
Does the student identify influential arguments on various sides of the issue?	
Does the student give *reasons* to support his/her own conclusion?	
Does the student anticipate and respond to likely objections to his/her conclusion?	
Outcome B Total	

OVERALL TOTAL (add Part A and B totals)	

B. Methods for Evaluation Student Learning Against the Rubrics (who is assessing what)

Allyson Mount and Sander Lee both evaluated all of the assignments from both courses using the attached provisional Ethics rubric. We removed the names from the odd numbered assignments from each of our classes, PHIL 320 Ethics (Mount) and HOLO/PHIL 313 Philosophy and the Holocaust. (Lee). While neither course was currently listed as an Integrative Studies course for fall 07, Ethics has successfully go through the curricular process and will be offered in the future as IHPHIL 220 with outcomes in ethics. It has not yet been decided whether HOLO/PHIL 313 should be proposed as an interdisciplinary Integrative Studies course.

Part III: Findings

A. Evaluation of Data for Each Learning Outcome

Overall, when figures from both assignments are put together and each is counted separately for each of the evaluators, 31 assignments met our expectations while 17 did not.

PHIL 320 Ethics
14 assignments were evaluated. Mount concluded that 12 assignments met expectations while 2 did not. Lee concluded that 9 assignments met expectations while 5 did not.
Thus, 21 assignments met expectations while 7 did not.

We also calculated the inter-rater reliability and found scores differed by an average of 1.428 points.

HOLO/PHIL 313
10 assignments were evaluated. Mount concluded that 5 assignments met expectations while 5 did not. Lee also concluded that 5 assignments met expectations while 5 did not. This means that 10 assignments met expectations while 10 did not. Lee will rethink the assignment in order to better prepare students to fulfill the ethics outcomes.

We also calculated the inter-rater reliability and found scores differed by an average of 1.428 points.

Here are the results broken down by Learning Outcome:

PHIL 320 Ethics
Allyson Mount's results in order from essays 1-14:

Outcome A, Q1: 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 2
Outcome A, Q2: 2, 2, 2, 2, 2, 2, 2, 1, 2, 1, 3, 2, 2, 3
Outcome B, Q1: 2, 2, 3, 3, 2, 2, 2, 2, 2, 2, 3, 3, 2, 2
Outcome B, Q2: 2, 2, 2, 3, 3, 3, 2, 2, 3, 2, 3, 3, 3, 2
Outcome B, Q3: 2, 2, 2, 2, 2, 3, 3, 1, 1, 2, 3, 2, 2, 1

Sander Lee's results in order from essays 1-14:

Outcome A, Q1: 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 2
Outcome A, Q2: 2, 1, 2, 1, 2, 2, 1, 1, 1, 1, 2, 2, 3, 1
Outcome B, Q1: 2, 2, 2, 1, 2, 2, 2, 2, 1, 2, 2, 3, 3, 3

Outcome B, Q2: 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 3, 3, 3, 2
Outcome B, Q3: 2, 1, 2, 1, 2, 2, 2, 2, 2, 2, 3, 3, 3, 2

HOLO/PHIL 313
Allyson Mount's results in order from exams 1-10:

Outcome A, Q1: 2, 3, 2, 3, 2, 2, 2, 2, 3, 2
Outcome A, Q2: 2, 2, 1, 1, 2, 2, 1, 1, 2, 2
Outcome B, Q1: 2, 3, 3, 3, 2, 2, 2, 2, 3, 2
Outcome B, Q2: 2, 2, 2, 2, 2, 2, 1, 2, 2, 2
Outcome B, Q3: 1, 2, 2, 1, 1, 2, 1, 1, 2, 1

Sander Lee's results in order from exams 1-10:

Outcome A, Q1: 2, 2, 2, 2, 2, 2, 2, 2, 2, 3
Outcome A, Q2: 1, 1, 2, 2, 1, 1, 1, 1, 2, 2
Outcome B, Q1: 1, 3, 3, 3, 2, 1, 2, 2, 3, 2
Outcome B, Q2: 2, 2, 2, 2, 1, 1, 2, 2, 2, 2
Outcome B, Q3: 1, 2, 1, 1, 1, 1, 1, 1, 1, 1

B. Changes recommended (rubrics, assignments etc…)

Allyson Mount has revised the rubric for next semester to more accurately reflect the extent to which our expectations for the ethics outcomes have been met. We think the specific ratings criteria will make this much more useful (and it should help ensure reliability, too).

Revised Ethical Outcomes Rubric for Spring 08
DRAFT – December 17, 2007

(The revised rubric itself is on the next page.)

Rationale for changes as the result of pilot test:

- The ratings scale wasn't nuanced enough. These revisions add a more detailed scale, modeled after the ITW rubric distributed at the ISP dinner in early December. The level ratings will still reflect the crucial information needed for overall program assessment, but the scale is now tailored to each question. This will allow assessors to identify specific strengths and weaknesses.
- The second assessment question was not useful on its own. While the idea is an important one, it was unclear how to apply the criterion as stated. In this revision, the idea was built into the ranking scale for the first question.
- The range of scores will now be greater, with a minimum Rating of 4 and a maximum of 24. A Rating score of 12 or higher is needed to meet the expectation (score of 3 x 4 questions). A Level score of 8 or higher is needed to meet the expectation.

Level 1: The artifact does not meet the expectation

- Ratings of 1 and 2

Level 2: The artifact does meet the expectation

- Ratings of 3 and 4

Level 3: The artifact exceeds the expectation

- Ratings of 5 and 6

Rater: _____ Item # _____

Identifying Ethical Issues Within A Content Area

1	2	3	4	5	6	Rating	Level
Does not identify a question or debate	Identifies a question or debate, but does not identify its ethical implications	Identifies an ethical question or debate, without relating it to other concerns within the content area	Identifies an ethical question or debate, relating it to other concerns within the content area	Identifies several ethical questions or debates, without drawing connections between them	Identifies several ethical questions or debates, drawing connections between them		

Identifying influential arguments on various sides of the debate

1	2	3	4	5	6	Rating	Level
No arguments identified	One view identified, but no alternatives brought up	Two or more views identified, with no discussion of how the view relate to each other	Two or more views identified, with discussion of how the views relate to each other	Multiple views identified, with a critical evaluation of one of the views	Multiple views identified, with a critical evaluation of each view		

Giving reasons to support an ethical conclusion

1	2	3	4	5	6	Rating	Level
No ethical conclusion present	Ethical conclusion present, but no reasons given to support it	Ethical conclusion present, with one reason mentioned to support it	Ethical conclusion present, with multiple reasons mentioned to support it	Ethical conclusion present, with an explanation of multiple reasons for supporting it	Complex ethical conclusion present, with nuanced reasons to support it		

Anticipating and respond to likely objections to one's conclusion

1	2	3	4	5	6	Rating	Level
No objections	Objections raised, but	One objection	Multiple objections	Multiple objections	Multiple objections		

considered	no response given	raised, with response given	raised, with response given to one of them	raised, with responses given to each	raised, with responses used to refine or clarify the conclusion		

TOTAL		

Based on discussions with our colleagues at the Ethics Roundtables and other forums (e.g., the Arts and Humanities Chairs meeting of November 30), we recommend that each assessment team include at least one member of the discipline whose course is being assessed. We make this recommendation because different disciplines may approach ethical issues in ways that are specific to that discipline.

Results from Spring 2008 Assessments (IQL and Ethics) – ITW assessments will not be completed until August.

ITW - From Kirsti Sandy for spring 2008:

I just finished reviewing all of the ITW evaluations, and I am pleased to say that they are *phenomenal*. Even people who received questionable evaluations in English 101 are now receiving high marks from students, particularly in the areas of "challenge," clarity of grading procedures, "effectiveness of instruction." The difference is truly significant. I do believe that this is a strong indicator that the faculty development opportunities, the formation of the cohort, and our clear, common outcomes have helped everyone make this important shift. Our students are benefitting from the changes we have made as a college. I did not see a single student comment about the course being "pointless" or "like high school," and not one question about why it is required (no complaints about "busywork")—clearly the work is meaningful. This is a first. The most common written comment was "thank you," written right at the end.

G. Information Literacy June 2008

ITW Library Citation Assessment Rubric

Objectives	Does Not Meet Objectives Criteria for 1 point	Partially Meets Objectives Criteria for 2 points	Meets Objectives Criteria for 3 points	Score
Applicable to project (title, argument, etc.)	Fewer than 50% sources are applicable	51% - 75% sources are applicable	More than 75% sources are applicable	
Credible sources (scholarly and/or reliable sources)	Fewer than 50% sources are credible	51% - 75% sources are credible	More than 75% sources are credible	
Completeness (elements of citation)	Fewer than 50% sources have complete citations	51% - 75% sources have complete citations	More than 75% sources have complete citations	
			Rubric Score	

3-5: poor (does not meet objectives)

6-7: average (partially meets objectives)

8-9: excellent (meets objectives)

Department/Program: Mason Library Faculty / Information Literacy

Assessment of Information Literacy using artifacts from the Thinking and Writing course of the Integrative Studies Program.

Program Outcomes and Means of Assessment

1. **Identify where the department's/program's outcomes are published.**
   - Q:\Library\Library Instruction\Assessment\Assessment Plan\ITW 08 citation analysis

2. **Identify the student learning outcomes that were assessed in the last academic year.**
   - Determine appropriate information by evaluating the relevance and usefulness of the information (based on ACRL Information Literacy Standard 3)
   - Evaluate credibility of sources by applying criteria such as currency, authority and objectivity (based on ACRL Information Literacy Standard 3)
   - Cite completely all sources used (based on ACRL Information Literacy Standard 5)

3. **Identify when the assessments occurred.**
   - Following the conclusion of Spring 2008 semester.

4. **Identify the methods used to assess the outcomes.**
   - The examination of a random sample (60) of ITW bibliographies.

5. **Identify the process used to assess the outcomes (who assessed, interpreted, reported).**
   - The library faculty developed a citation rubric to assess each bibliography. Bibliographies were divided among the faculty and individually assessed. Results were discussed, tabulated, and analyzed.

Results of Assessment

1. **Summarize the assessment results.**
   - 32% met the objectives
   - 40% partially met the objectives
   - 28% did not meet the objectives

2. **Describe how the department/program will use assessment results to impact and improve student learning (e.g. curricular changes, pedagogical innovations, revision of program outcomes).**
   - Further discussion with ITW faculty on emphasizing the importance of the research process in collaboration with the library faculty.
   - The library faculty will revise the rubric to assign weights to elements for more accuracy in scoring.
   - The library faculty will standardize the scoring of the rubric.

- Pedagogically, the library faculty will re-emphasize the credibility, variety, and verification of resources.

3. **Identify resource requests needed to address assessment results and improve student learning. Dean will use information in preparing budget for following fiscal year.**
   - The library faculty plans to adopt the Project SAILS assessment tool to be used as a pre-test/post-test.

4. **Describe how any revisions made will be evaluated, by whom and by when. Identify date for reporting to dean results of revisions.**
   - The library faculty will meet in May 09 and discuss, tabulate, and analyze the results, and compare them to the May 08 report.
   - Report will go to the Dean upon completion.

H. Report on assessment of QL student projects, Spring 2008 submitted June 2, 2008

On May 22 and 23, Dr. Olga Chuyan, Adjunct Professor of Mathematics, and Dr. Dick Jardine, Associate Professor of Mathematics, completed the assessment of student projects, and this is the report of that effort. This document describes the manner in which the assessment was conducted, the results of the assessment, and provides recommendations for "close the loop" actions.

The task of sampling the projects selected for assessment was accomplished by Dr. Yi Gong, and those 50 projects were made available to the evaluators at a *Bb* website. This action was a *significant* administrative improvement which greatly facilitated the assessment process for the evaluators.

The projects were assessed using the same rubric as for the Fall 2007 semester. Recommendations for minor improvement of the rubric are included as Appendices A and B, to be discussed later. Below is a table (TABLE 1) summarizing the numerical results of the assessment of the respective learning outcomes.

TABLE 1 Assessment results Outcome:	**Needs improvement**	**Met expectation**	**Exceeded expectation**	**% Met/Exc**
1. Apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.	25	25	0	50
2. Use appropriate software to create spreadsheets, tables, graphs, and charts.	16	34	0	68

3. Read and interpret visually represented data.	28	22	0	44
4. Apply prior knowledge to solve a new problem.	4	46	0	92
5. Overall project assessment	26	24	0	48

Figure 1 below depicts the same data, showing the percentage of student projects that met or exceeded expectations. Once again, no student projects exceeded expectations. The numbers below the bars correspond to the respective numbers of the outcomes in TABLE 1 above. It is clear from the graph and the table that the projects met expectations at a high rate for one outcome but did not in the others.

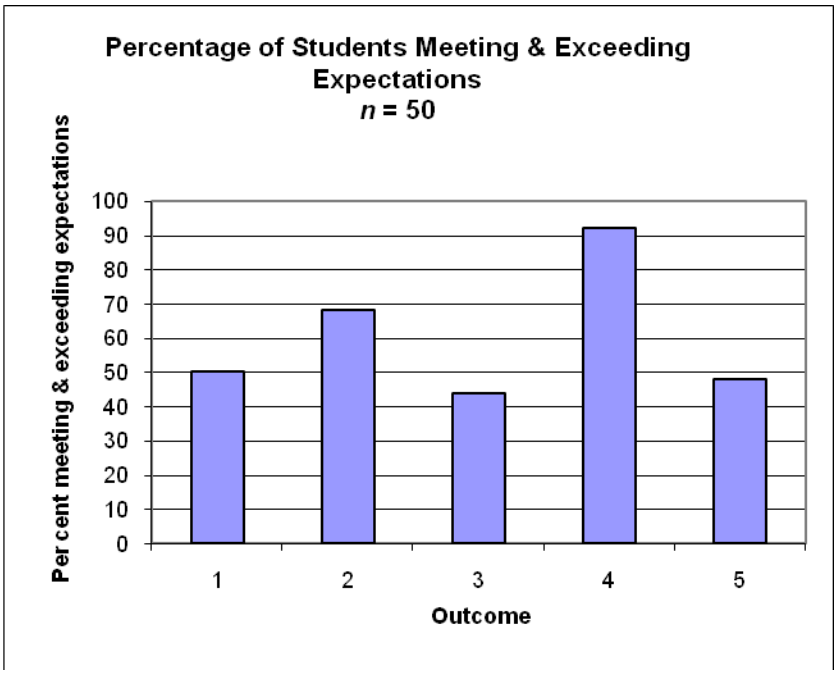


Figure 1

It is important to compare the Spring 2008 results with those of the Fall 2007 semester, which is done in Figure 2 below. In that graph, we note that a greater percentage of students demonstrated achievement of the outcomes in all areas the second semester. We attribute this primarily to the efforts of QL faculty to more clearly communicate project expectations to students, and to the efforts of students to, in turn, perform to those standards. This is a very reassuring result in our effort to encourage faculty to use authentic assessment and for students to respond positively to the challenge.

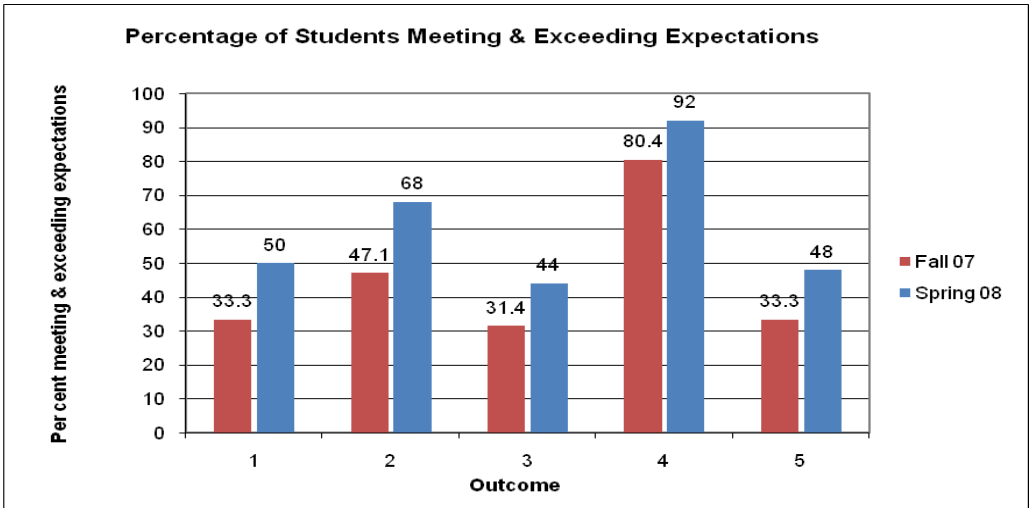


Figure 2

The items in the following bulleted lists are observations made in the process of conducting the assessment of the QL projects. The observations are categorized as administrative, calibration, and general project comments.

Administrative issues:

- The administration of the assessment went *very* smoothly. Dr. Gong and the IT staff did a great job of making it work, or at least having the difficulties not hinder the assessment by faculty.

Calibration session:

- The calibration session was much shorter than last time, less than a half-hour, since the same evaluators conducted the assessment.
- We noted that several projects were not written in narrative form, and appeared to be not much more than PowerPoint slides. Dr. Chuyan correctly suggested that we modify the rubric to clearly state that a narrative report is expected, written in complete sentences and paragraph from in an appropriate report format. That correction was implemented and is addressed in the rubric and checklist included in the Appendices.

Comments on the projects:

- It remains clear that some project assignments did not require students to demonstrate proficiency in meeting the designated learning outcomes.
    - Projects contained no graphs and/or very little statistical work in the narratives.
    - Projects contained no analysis of statistics/graphs produced by software, or no evidence of software usage.
- Student analysis of graphs or numerical statistics was often weak or non-existent. In some cases, it was apparent that students can "do the math", but have difficulty describing what the resulting numbers mean.
- Many project submissions *still* had pages and pages of *Excel* output with no discussion, or even mention, of the included spreadsheets.
- Some students produced graphs with *Excel*, but they were poorly labeled to the point of not conveying the information the student hoped to communicate.
- The project submissions we evaluated were principally just one file. That is a vast improvement. The exceptions were submissions that included a *Word* document and *Excel* spreadsheet.

Based on those observations, the following recommendations are offered to close the loop.

- Students are apparently getting the message to learn to combine their various files into one document. That practice should be continued.
- Faculty teaching the QL course should continue to be mindful of the QL outcomes when designing project requirements. It is strongly recommended that the project rubric be shared with students prior to their starting the assignment.
- Students struggle with using quantitative information to support their arguments. In many projects, there is only a presentation of "the numbers" without much analysis or demonstration of where the numbers came from or their connection to the context of the course. It is suggested that faculty provide many opportunities for students to practice that skill, with both in- and out-of-class activities designed for that purpose. Providing students with examples of "how it is done" is an important modeling exercise to facilitate student learning.
- All project submissions should include well-labeled graphs and tables that are clearly produced by a software package, such as *Excel* or *SPSS*. This is a clearly stated QL requirement that is not appearing in most of the submissions.
- Any difficulties in collecting, sampling, or having the projects available were totally hidden from the reviewers, making our task simple. The time required for faculty to do the assessment was significantly reduced. This administrative support should continue.

In summary, this assessment reveals that faculty are increasingly understanding the expectations of the QL outcomes assessment and that student submissions are improving. The assessment was readily accomplished in a reasonable amount of time by faculty. Including an adjunct professor in the assessment process continues to be important as adjuncts are bearing a large load in QL instruction at KSC. Faculty should continue to discuss how to include projects (in some sense, technical writing) as a learning vehicle in QL courses. Students must be challenged in QL courses to not only compute statistics and create well-labeled graphs, but interpret what the specific statistics mean and what the graphs reveal in the context of the specific QL course subject. Continued faculty development will continue to improve student learning in the QL program.

Respectfully submitted,

Dick Jardine
Associate Professor of Mathematics

Appendix A-1

IQL 101
Project Evaluation Rubric

	Needs Improvement	Met Expectation	Exceeded Expectation
Apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data.	Pictorial representation or numerical summary measures not included, inappropriate, or not used in a meaningful way. No discussion (in complete sentences, in paragraph form) of the graphical or numerical representations included in the text to support argument.	Both an appropriate pictorial representation and an appropriate numerical summary measure included and used in meaningful ways. Discussion of the graph(s) or numerical measures (in complete sentences and paragraph form) included.	Appropriate pictorial representations and numerical summary measures are used and discussed effectively to support conclusions.
Use appropriate software to create spreadsheets, tables, graphs, and charts.	No or inappropriate tables, graphs, or charts. Tables, charts, or graphs incorrectly labeled.	Software is used to tabulate numerical computations and to create an appropriately labeled graph or chart.	Software used to tabulate numerical computations. Incorporates appropriately labeled graphs or charts in a creative and effective way.
Read and interpret visually represented data.	Inaccurate or missing interpretation of visually represented data in narrative form.	Accurate interpretation of visually represented data in narrative from.	Accurate interpretation of visually represented data and clear, concise explanation of the interpretation in narrative form.
Apply prior knowledge to solve a new problem.	Weak or no connection to information learned in the course. Quantitative language used incorrectly. Weak or no synthesis of quantitative and contextual aspects of the course.	Connection to information learned in the course. Quantitative language used correctly. Synthesized quantitative and contextual aspects of the course.	Extended information learned in the course. Used quantitative language correctly. Synthesized quantitative and contextual aspects of the course.

Appendix A-2

Needs Improvement Contains many of the following
Pictorial representation or numerical summary measures not included, inappropriate, or not used in a meaningful way. No discussion of the graphical or numerical representations included in the text. No or inappropriate tables, graphs, or charts. Tables, charts, or graphs incorrectly labeled. Inaccurate or missing interpretation of visually represented data. Weak or no connection to information learned in the course. Quantitative language used incorrectly. Weak or no synthesis of quantitative and contextual aspects of the course. Bullets or simple sentences instead of narrative.
Met Expectation Does most or many of the following
Both an appropriate pictorial representation and an appropriate numerical summary measure included and used in meaningful ways. Discussion of the graph(s) or numerical measures included. Software is used to tabulate numerical computations and to create an appropriately labeled graph or chart. Accurate interpretation of visually represented data. Connection to information learned in the course. Quantitative language used correctly. Synthesized quantitative and contextual aspects of the course. Narrative in complete sentences and paragraph form.
Exceeded Expectation Consistently does all or most of the following
Appropriate pictorial representations and numerical summary measures are used and discussed effectively to support conclusions. Software used to tabulate numerical computations. Incorporates appropriately labeled graphs or charts in a creative and effective way. Accurate interpretation of visually represented data and clear, concise explanation of the interpretation. Extended information learned in the course. Used quantitative language correctly. Synthesized quantitative and contextual aspects of the course. Well-written narrative organized as an easily readable report.

Appendix B

QL Outcomes Project Assessment

Project Number _____

Evaluator Initials _____

Outcome	Needs Improvement	Met Expectation	Exceeded Expectation
Apply the basic methods of descriptive statistics, including both pictorial representations and numerical summary measures, to analyze data. Narrative in complete sentences and paragraph form.			
Use appropriate software to create spreadsheets, tables, graphs, and charts.			
Read and interpret visually represented data, writing in complete sentences and paragraph form.			
Apply prior knowledge to solve a new problem.			
Overall Project Assessment			

I. Ethics Outcomes Pilot Report Spring 2008

Methodology

In spring semester 2008, faculty teaching at least eighteen different courses (or distinct sections of courses with variable topics) had selected Ethics as an Integrative Studies outcome for their courses. The assessment rubric was a work in progress throughout the previous fall and winter, so many of these faculty were unfamiliar with the exact criteria being assessed when the semester began. Consequently, not everyone collected an assignment suitable for assessment purposes. Thus, a decision was made to conduct a second pilot assessment using artifacts collected from seven faculty who volunteered assessable artifacts from their own courses. The goals of this pilot were twofold: 1) to test the practical application of the rubric, which had been revised extensively since the first pilot in fall 2007, and to make further changes if necessary; and 2) to begin collecting baseline data on success in achieving the Ethics outcomes themselves.

On May 13, a group of six faculty using Ethics outcomes in their courses met to calibrate assessment responses. The faculty involved were: Sander Lee, Allyson Mount, Wes Martin, Kirsti Sandy, Susan Whittemore, and Liz Pacillio. Prior to this meeting, we all uploaded student files for assessment to a Blackboard site. The files were reformatted to remove student identification,

and they were numbered consecutively within each course and uploaded to separate folders for each course.

A total of 185 artifacts from eight different courses were available for assessment. The artifacts ranged in length from short-response questions to twenty-page Thinking & Writing papers. Before the calibration meeting, instructors selected several artifacts from their own courses that they felt corresponded to "needs improvement", "meets expectation", and "exceeds expectation" according to the rubric. All six participants read, rated, and discussed seven of these anchor artifacts from various courses. Our goal was to achieve similar responses to each artifact, in an effort to ensure inter-rater reliability. As a result of discussing the first three anchors, we made several changes to the rubric to clarify what fell into each category. Using the revised rubric, we assessed four more artifacts. After several hours of discussion and revisions, we arrived at substantial agreement on most assessments and felt confident that we would all be applying the rubric consistently.

Four faculty agreed to participate in the actual assessments. Our aim was to assess 10% of the 185 artifacts submitted. All artifacts ending in the number 5 were selected for assessment (so Lee 5 and Lee 15 were assessed, Martin 5 and Martin 15 and Martin 25 were assessed, etc.). Given the differing enrollments in each course, this procedure resulted in 20 artifacts selected for assessment, or approximately 10.1% of those submitted. In the future we will use a truly random selection procedure, but for the purposes of this pilot we did not have the Blackboard set-up or resources to fully randomize the selection.

Since the total number of artifacts assessed was relatively low, we agreed that two people should assess each. The assessors divided into pairs, and each pair was assigned to assess half of the artifacts. The two people in the pair each assessed the artifacts independently.

The rubric used for the assessments is on the next page.

Ethics Outcomes Assessment Rubric

For Second Pilot, Spring 2008

Report submitted by Allyson Mount in June 2008.

Assessor _____ Item #_____

		1 Needs Improvement	2 Meets Expectation	3 Exceeds Expectation	SCORE (1, 2, or 3)
A	**Identifying Ethical Issues**	Does not identify an ethical question or debate	Identifies an ethical question or debate	Sets the ethical question or debate within a broader context	
B	**Identifying influential arguments on various sides of the debate**	No arguments identified Or One view identified, but no alternatives brought up	Two or more views are discussed	Two or more views discussed, with a critical evaluation of at least one of the views	
C	**Giving reasons to support one's ethical conclusion**	No ethical conclusion presented Or Ethical conclusion present, but no reasons given to support it	Ethical conclusion present, with one reason to support it discussed	Ethical conclusion present, with an explanation of multiple reasons for supporting it	
D	**Anticipating and responding to likely objections to one's conclusion**	No objections considered Or Objections raised, but no response given	At least one objection raised, with only one response given	Multiple objections raised, with responses given to each	
				TOTAL:	

Total scores of 4-6 result in an overall assessment of "Needs improvement".

Total scores of 7-9 result in an overall assessment of “Meets expectation”.
Total scores of 10-12 result in an overall assessment of “Exceeds expectation”.

Findings

Inter-rater reliability: Inter-rater reliability was very high. In overall total ratings, raters differed by an average of 0.95 on a scale with 0 to 8 points of variation possible. No artifact received ratings differing by more than 2 points by any pair of raters. This suggests that our calibration was successful, and a high degree of inter-rater reliability was achieved.

Overall results: The total score reflects the overall rating of each artifact, with all four Ethics outcomes taken into account. The possible total scores for each artifact ranged from 4 to 12.

- Total scores of 4-6 result in an overall assessment of "Needs improvement".
- Total scores of 7-9 result in an overall assessment of "Meets expectation".
- Total scores of 10-12 result in an overall assessment of "Exceeds expectation".

Of the 20 artifacts assessed, 58% met or exceeded the expectation, while the remaining 42% needed improvement.

Total in each category, out of 40 assessments (for 20 artifacts, each assessed by two raters):

	Needs improvement	Meets expectation	Exceeds expectation
Overall assessments receiving this rating	17 (42%)	15 (38%)	8 (20%)

Results for each outcome: Four specific outcomes were assessed (see rubric).

- For outcome A, 75% met or exceeded expectations.
- For outcome B, 67% met or exceeded expectations.
- For outcome C, 67% met or exceeded expectations.
- For outcome D, 45% met or exceeded expectations.

Total in each category, out of 40 assessments (for 20 artifacts, each assessed by two raters):

	Needs improvement	Meets expectation	Exceeds expectation
Outcome A	10 (25%)	24 (60%)	6 (15%)
Outcome B	13 (33%)	18 (45%)	9 (22%)
Outcome C	13 (33%)	19 (48%)	8 (19%)
Outcome D	22 (55%)	16 (40%)	2 (5%)

Discussion

The strongest results were for Outcome A, "Identifying ethical issues". The fact that three-quarters of all students met or exceeded expectations on this measure is a good sign that courses listing Ethics outcomes are fulfilling the basic goal of introducing students to ethical views related to a wide range of course topics. Anecdotally, it seemed that most students who did not meet expectations for this outcome actually did address an issue with ethical implications; however, they discussed only the practical implications of the issue, rather than the ethical ones. A relatively minor change in how the assignments are presented may prompt students to focus more explicitly on the ethical aspects of their topics in the artifacts for assessment.

Similarly, the fact that 67% met or exceeded expectations for "Identifying influential arguments on various sides of the debate" and "Giving reasons to support one's ethical conclusion" (Outcomes B and C) indicate that courses listing Ethics outcomes are familiarizing students with the dialectical nature of ethical arguments. This awareness is especially important because students often simply assert their own opinion without recognizing that a strong ethical argument (like strong arguments on other subjects) must be backed up by thoughtful reasoning. Applying critical thinking skills to ethical issues, as measured by Outcomes B and C, is thus a crucial part of an in-depth engagement with ethical debates. While a full two-thirds of artifacts did display these skills, there is certainly room for improvement in both of these areas.

Outcome D, "Anticipating and responding to likely objections to one's conclusion", showed the weakest results, with less than half of the artifacts meeting expectations. This is clearly the most difficult of the four outcomes, so it is not surprising that students had particular trouble with it. Outcome D builds on the three previous outcomes, especially Outcomes B and C. Thus, the results are always likely to be lowest in this category. Additional emphasis on the importance of moving from unsupported opinions to evaluating *reasons* for and against particular ethical claims is likely to improve the scores on this and other outcomes.

All of these results should be interpreted in light of the fact that the assignments leading to the artifacts assessed were developed before the final version of the rubric was completed, since we continued to make adjustments to the rubric up through our calibration meeting in mid-May. In the future, all faculty listing Ethics outcomes will have access to the rubric in advance. This will allow faculty to develop an assignment for assessment with full knowledge of the criteria for meeting each outcome's expectations, which will presumably result in higher scores.

The rubric itself, in the revised version used, proved to be fairly easy and efficient to apply. While we anticipate that changes may become necessary at any point in the future, no major problems with the rubric's application were identified as a result of this pilot.

Recommendations

Based on our work on this pilot, we have the following recommendations:

- Our goal for the fall 2008 semester is to assess a random sample of 10% of the artifacts from all courses listing Ethics Outcomes. To do this, we will need to distribute the rubric to all faculty listing these outcomes early in the semester, so that each instructor knows to design an assessable assignment and have students submit it electronically.

- We will need to hold a roundtable or other forum early in the fall semester to explain the outcomes and the assessment process to all involved faculty. In the past, roundtables have

not commanded high attendance. In order to conduct a full-scale assessment in the 2008-2009 academic year, it is crucial that we have some way of verifying which courses have Ethics outcomes, and of ensuring that all faculty teaching courses with Ethics outcomes are aware of the need to collect an assessable assignment. This forum may also be a useful time to discuss the rationale behind each outcome, and to exchange practical ideas for incorporating these outcomes into a wide range of courses.

- In the future, students will remove identifying information themselves and upload their files directly to the Ethics Outcomes Assessment Blackboard site. Streamlining this process should be a priority, to reduce duplication of effort and ensure that we collect artifacts from all courses with Ethics outcomes.

- Once we have the results of a full-scale assessment next fall, we will be in a better position to make specific recommendations for improving the results for each outcome.

ADDENDUM E – Grant Fund Expense Breakdown

DAVIS GRANT
DECEMBER 1, 2005 THROUGH JUNE 30, 2008
54N118 KAACUR

EXPENSES BY CATEGORY

PERSONNEL	
Stipends: Facilitators, Roundtables, Workshops, Meetings:	165,635.26
Stipends: Assessment	8,122.50
TOTAL PERSONNEL	**173,757.76**
TOTAL FRINGE BENEFITS	**14,646.98**
TRAVEL	
In-state Travel	861.39
Out-of-state Travel	16,082.35
Conference Registration Fees	8,492.50
Student or non-employee travel	1,693.10
TOTAL TRAVEL	**27,129.34**
SUPPLIES	**4,571.74**
PRINTING & COPYING	**482.12**
MEALS	**7,046.06**
CONSULTING/PROFESSIONAL SERVICES	**6,200.00**
TOTAL EXPENSES	**233,834.00**