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## **Palo Alto College Assessment of Institutional General Education Competencies Spring 2011 Report**

During Spring 2011, Palo Alto College continued to strengthen existing processes for assessment of institutional general education competencies, using again the direct evidence approach it launched in Fall 2010. Three competencies were assessed: Critical/Creative Thinking, Personal Responsibility, and Empirical and Quantitative Reasoning Skills. Three learning outcomes were specified for each of these competencies. Embedded assignments were submitted to independent assessors who evaluated student work using a common descriptive rubric. The rubrics and assignment templates are in Appendix A of this report.

### **The Process and Procedures Used**

#### **Student and Course Selection:**

A group of Palo Alto College students who had taken 45 or more college credit hours, who were enrolled in the Spring 2011 semester, and who were taking at least three courses was identified by Institutional Research. From this group a random sample of 105 students was chosen as the focus of the assessment effort (approximately 10% of projected graduates). Using the Texas Higher Education Coordinating Board's crosswalk between core curriculum courses and core curriculum competencies, courses were selected from each student's schedule in order to assess the student, where possible, in all three of these competencies: Critical/Creative Thinking Skills, Personal Responsibility, and Empirical and Quantitative Reasoning Skills.

In an effort to strengthen and produce better student outcomes in distance education, the decision was made to give preferences to online courses when selecting courses from the students' schedules. The following details the method used for course selection from each student's schedule:

1. Any courses addressing Empirical and Quantitative Reasoning Skills were identified. Of this group of courses, all of which were necessarily core curriculum courses, if any were distance learning courses, they were given priority. If more than one course was a distance learning course, then a random method was used to choose the course. If none of the courses were distance learning courses, then a random method was used to choose the Empirical and Quantitative Reasoning Skills course.
2. Any courses addressing Personal Responsibility were identified. Of this group of core courses, if any were distance learning courses, they were given priority. If more than one course was a distance learning course, then a random method was used to choose the course. If none of the courses were distance learning courses, then a random method was used to choose the Personal Responsibility course.
3. Critical/Creative Thinking Skills are addressed in every course, whether core curriculum course or not and thus guided the last selected course. Of the remaining courses, any distance learning

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9/21/2011



ALAMO  
COLLEGES

**PALO ALTO COLLEGE**

courses were identified. If more than one course fell into this category, then a random method was used to select the course. If there were no distance learning courses remaining, then core courses were given priority and a random method for selecting the course was used. If there were no core courses remaining, then a random method for selecting the course was used to choose the Critical/Creative Thinking Skills course.

**Student Assignments for Assessment:**

All assignments requested for a given competency were numbered to aid in disaggregating the data for overall results, core course results, and distance learning course results. The selected courses, with student names and the competencies to be assessed, were then disaggregated by faculty member and the department chairs disseminated the assignment requests to their respective faculty members. Faculty members used embedded assignments for each assessment, completing the "Assignment Template" for the competency in order to provide assessors with greater insight and to aid fair judgment.

**Assessment Training and Logistics**

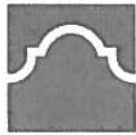
Volunteer faculty Assessors received Calibration Training in order to standardize, to the degree possible, assessment of student artifacts. Assessors received training on the use of the Judgment Spreadsheets and the assessment process, and sample Critical/Creative Thinking, Personal Responsibility, and Empirical and Quantitative Reasoning Skills assignments were judged as a part of the training.

Student artifacts for Critical/Creative Thinking, Personal Responsibility, and Empirical and Quantitative Reasoning Skills, attached to Assignment Templates, were sent to the Director of Instructional Professional Development. Once assignments and Templates were received, they were provided a number and all instructor markings, student names, and instructor names were removed from the document. Two copies were made.

Each assessor received a set of assignments, each accompanied by the Assignment Template and the appropriate rubric. Every assignment was then independently assessed by two assessors. The results of the assessments were recorded on Judgment Spreadsheets, which were then sent with the assignments to the Director of Instructional Professional Development. The Director of Instructional Professional Development compiled all results on a master spreadsheet.

In cases where paired assessors reached judgments that were polar opposites, a third assessor was brought in. Third assessors reported their judgments to the Director of Instructional Professional Development. In cases where the third assessor's judgment agreed with one of the initial two assessors, the two common assessments were kept as the assessment findings. In cases where the third assessor's judgment did not match either of the original assessors judgments, the highest two judgments were chosen for that objective on that assignment and kept as the assessment findings. All assessment was completed by the last day of final exam week Spring 2011.

Pat Stone  
Director of Instructional Professional Development  
9/21/2011



# ALAMO COLLEGES

## PALO ALTO COLLEGE Findings Report

The Findings Report provided the data, reported by objective within each competency and also disaggregated by core courses and distance learning courses. These findings were shared with the faculty during Convocation Week, Fall 2011. Having reviewed the findings, faculty brainstormed to generate action plans for improving both the learning outcomes and the assessment process. The Findings Report and the worksheet used during faculty meetings early Fall 2011 semester to develop related action plans are in Appendix B of this report.

### Summary of Findings

#### Participation Rates

Overall, 232 assignments from the 105 students in the sample were submitted for assessment of the three competencies. One hundred seventeen faculty were asked to submit at least one assignment. Of the 232 assignments requested, 207 were student assignments from core courses and 101 were student assignments from distance learning courses. Of the 232 assignments requested, 159 assignments were actually assessed (69%). Most of the missing assignments were attributed to students in the sample who had dropped their course(s). Of the 105 students identified, 49 students (47%) had missing assignments due to dropping the course or assignments not submitted in time to be assessed. Including faculty assessors, 130 faculty participated in the assessment of the competencies Spring 2011 semester.

#### Critical/Creative Thinking Findings

The total number of Critical/Creative Thinking assignments requested was 95. Of these 95, 70 were from core courses and 40 were from distance learning courses.

The total number of Critical/Creative Thinking assignments assessed was 71(75%). The reasons for the missing assignments are the following:

- 20 students dropped and did not complete the assessment assignment,
- 2 students submitted their assignments too late to be assessed,
- 1 faculty member did not respond to request for updates on the student so the reason for not submitting the assignment is unknown, and,
- 1 faculty member did not have an assignment in the course that addressed the competency.

Of these 71 assessed assignments, 49 were from core courses and 31 were from distance learning courses.

Overall, for the 71 assessed courses, the ratings for all three critical thinking outcomes exceeded the target of 70% either meeting or exceeding expectations.



PALO ALTO COLLEGE

The highest scoring outcomes overall were outcome 1: **Inquiry and Analysis** - Students pose vital questions and identify problems, formulating them clearly and precisely, and outcome 2: **Evaluation and Synthesis** - Students consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences (for both of these outcomes, 84% of assessed assignments either meeting or exceeding expectations). The lowest scoring outcome overall was outcome 3: **Creative Thinking and Innovation** - Students apply creative ideas or approaches to achieve solutions or complete projects (70% of assessed assignments either meeting or exceeding expectations).

For the 49 core courses, the highest scoring outcome for critical thinking was outcome 2: **Evaluation and Synthesis** - Students consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences (87% of assessed core course assignments either meeting or exceeding expectations). The lowest scoring outcome for core course assignments was outcome 3: **Creative Thinking and Innovation** - Students apply creative ideas or approaches to achieve solutions or complete projects (74% of assessed core assignments either meeting or exceeding expectations). The ratio of assessed to identified core critical thinking assignments was 70%.

The highest outcome for the 31 distance learning critical thinking assignments was outcome 2: **Evaluation and Synthesis** - Students consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences (86% of assessed core course assignments either meeting or exceeding expectations). The lowest outcome for distance learning assignments was outcome 3: **Creative Thinking and Innovation** - Students apply creative ideas or approaches to achieve solutions or complete projects (70% of assessed core assignments either meeting or exceeding expectations). The ratio of assessed to identified distance learning critical thinking assignments was 75%.

### **Personal Responsibility Findings**

The total number of Personal Responsibility assignments requested was 62. All 62 were from core courses and 32 were from distance learning courses.

The total number of Personal Responsibility assignments assessed was 33 (53%). The reasons for the missing assignments are the following:

- 21 students dropped and did not complete the assessment assignment,
- 1 student submitted the assignment too late to be assessed,
- 2 faculty members did not respond to request for updates on the student so the reason for not submitting the assignments is unknown, and,
- 5 faculty submitted assignments that did not address the outcome they indicated on the assignment template (the assignments could not be assessed using the rubric).

Of these 33 assessed assignments, 33 were from core courses and 13 were from distance learning courses.



PALO ALTO COLLEGE

For all 33 assessed courses, two Personal Responsibility outcomes exceeded the target of 70% or more either meeting or exceeding expectations. Those outcomes were outcome 2: Students recognize ethical issues in the social context of problems. (85% of assessed assignments either meet or exceed expectations) and outcome 3: Students analyze alternative ethical perspectives and predict the ramifications of those perspectives to a situation (72% of assessed assignments either meet or exceed expectations). One Personal Responsibility outcome did not meet the target of 70% either meeting or exceeding expectations. This outcome was outcome 1: Students assess their own ethical values and identify the origin of their values (68% either meeting or exceeding expectations).

Thus the highest scoring outcome overall was outcome 2: Students recognize ethical issues in the social context of problems (85% of assessed assignments either meet or exceed expectations). The lowest scoring outcome overall was outcome 1: Students assess their own ethical values and identify the origin of their values (68% either meeting or exceeding expectations). Outcome 1 was the most addressed outcome in the submitted assignments and outcome 3 was the least addressed outcome in the submitted assignments.

For the 13 distance learning courses, the highest scoring outcome for personal responsibility was outcome 2: Students recognize ethical issues in the social context of problems (77% of assessed Distance Learning course assignments either meeting or exceeding expectations). The lowest scoring outcome for distance learning personal responsibility was outcome 3: Students analyze alternative ethical perspectives and predict the ramifications of those perspectives to a situation (30% of assessed distance learning assignments either meeting or exceeding expectations). The ratio of assessed distance learning personal responsibility assignments to identified personal responsibility assignments was 41%.

### **Empirical and Quantitative Reasoning Skills Findings**

The total number of Empirical and Quantitative Reasoning Skills assignments requested was 75. All 75 were from core courses and 29 were from distance learning courses.

The total number of Empirical and Quantitative Reasoning Skills assignments assessed was 55 (73%). The reasons for the missing assignments are the following:

- 15 students dropped and did not complete the assessment assignment,
- 1 student submitted the assignment too late to be assessed,
- 3 faculty members did not respond to request for updates on their students so the reason for not submitting the assignment is unknown, and,
- 1 faculty member did not have an assignment in the course that addressed the competency.

Of these 55 assessed assignments, 55 were from core courses and 23 were from distance learning courses.



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For all 55 assessed courses two Empirical and Quantitative Reasoning Skills outcomes exceeded the target of 70% either meeting or exceeding expectations. Those outcomes were outcome 1: **E & Q Knowledge (Understand the Problem)** Students identify problems or hypotheses and related quantitative components (77% of assessed assignments either meet or exceed expectations) and outcome 2: **E & Q Inquiry (Devises a Plan)** Students select appropriate quantitative approaches to analyze and solve problems and investigate hypotheses (79% of assessed assignments either meet or exceed expectations). One Empirical and Quantitative Reasoning Skills outcome did not meet the target of 70% either meeting or exceeding expectations. This was outcome 3: **E & Q Reasoning (Executes the Plan and Looks Back)** Students correctly apply quantitative approaches to analyze and solve problems or investigate hypotheses (65% of assessed assignments either meet or exceed expectations).

Thus the highest scoring outcome for Empirical and Quantitative Reasoning Skills overall was outcome 2: **E & Q Inquiry (Devises a Plan)** Students select appropriate quantitative approaches to analyze and solve problems and investigate hypotheses (79% of assessed assignments either meet or exceed expectations), and the lowest scoring outcome overall was outcome 3: **E & Q Reasoning (Executes the Plan and Looks Back)** Students correctly apply quantitative approaches to analyze and solve problems or investigate hypotheses (65% of assessed assignments either meet or exceed expectations).

For the 23 distance learning courses, the highest scoring outcome for empirical and quantitative reasoning skills was outcome 1: **E & Q Knowledge (Understand the Problem)** Students identify problems or hypotheses and related quantitative components (100% of assessed distance learning assignments either meet or exceed expectations). The lowest scoring outcome for distance learning empirical and quantitative reasoning skills was outcome 3: **E & Q Reasoning (Executes the Plan and Looks Back)** Students correctly apply quantitative approaches to analyze and solve problems or investigate hypotheses (60% of assessed distance learning assignments either meet or exceed expectations).

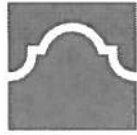
#### **Improvements Implemented Spring 2011 Based on Fall 2010 Assessment**

The following is a list of improvements made in the Spring 2011 assessment that resulted from the Fall 10 assessment effort:

##### **Professional Development to address Teamwork in Distance Learning Courses**

Early in the Fall 2010 semester, some of the faculty teaching distance learning who were tapped for Teamwork assessment indicated that they do not address teamwork in their online course. This prompted professional development efforts to showcase ideas for addressing teamwork in distance learning courses. A document with ideas and suggestions was compiled, and a face-to-face Online Teamwork Show-and-Share session was held during the Spring 2011 Convocation Week. During the Convocation Week session, Alamo College faculty presented their courses to their colleagues. Additionally, July 13 and July 14, 2011, Dr. Judith Boettcher, author and national expert in online learning, presented workshops to the faculty on the framework and the best principles and practices for deepening learning experiences and knowledge building in online and blended learning. Dr. Boettcher

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9/21/2011



ALAMO  
COLLEGES

PALO ALTO COLLEGE

also addressed building community in online courses, and the use of teamwork as a community building strategy.

### **Professional Development to Aid Non-English and Non-Speech Faculty in the Promotion of Student Learning of Written and Oral Communication Skills**

Employee Development Day (9/29/10) included a faculty-to-faculty session led by English and Speech Faculty. This session provided tips on promoting and assessing written and oral communication skills across the curriculum.

### **Efforts to Increase Student Learning in Written Communication**

The weakest outcome for Communication Skills involved the student use of grammar and sentence structure. The Writing Center (the tutoring center that coaches students on written communication skills) created on-line help sheets for students addressing grammar and sentence structure, and during Spring 2011 faculty were directed to these summaries.

### **Efforts to Make the Assessment Process More User-Friendly to Faculty**

Among the suggestions was the request that faculty be provided a longer span of time to submit assignments for assessment. During Fall 2010, data challenges in the process of identifying students gave faculty just one month to submit assignments. For Spring 2011, the process allowed faculty 2.5 months for collecting and submitting assignments for assessment from identified students. A second suggestion from the faculty was that a clarification of which Palo Alto College courses were responsible for addressing which general education competency be provided. A cross-walk file showing Palo Alto College courses and the General Education competencies that the courses addressed was created and disseminated to the faculty early in the Spring 2011 semester. A third faculty suggestion requested the creation of an Assessment website, facilitating faculty access to all assessment related materials. This website was launched February 25, 2011: <http://www.alamo.edu/pac/assessment/development/>. This website will be updated twice a year.

### **Professional Development Efforts to Assist Faculty in Understanding the Assessment Process**

Faculty requested that professional development sessions be scheduled which would strengthen their understanding of the assignment expectations for the three competencies assessed Spring 2011. Three professional development sessions were scheduled. In a further effort to reach out to faculty, distribution lists of the faculty who would be submitting Critical Thinking assignments, Personal Responsibility assignments, and Empirical and Quantitative Reasoning assignments were created. Each faculty group received tips on analyzing their rubric, selecting or modifying an assignment, filling out the assignment template, and submitting the assignment and template. During Summer 2011, guidelines specific to the competencies to be assessed in Fall 2011 were developed and distributed to faculty.

### **Professional Development Efforts to Revise Assessment of Communication Skills and Teamwork Skills**

Pat Stone  
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9/21/2011



ALAMO  
COLLEGES

PALO ALTO COLLEGE

During Fall 2011 Palo Alto College will again assess Communication Skills and Teamwork Skills. In order to strengthen the assessment of these two learning outcomes, two professional development sessions were held in Spring 2011, inviting faculty to create a 'community of practice' interested in promoting Communication and Teamwork Skills. These sessions gave faculty an opportunity to continue the Communication and Teamwork discussions initiated during the Spring 2011 Faculty Development Day. During Summer 2011, the Palo Alto College Assessment Team revised the assessment of Communication Skills and Teamwork Skills. Processes for submitting oral and visual communication assignments were revised. Teamwork assessment was revised to include a definition of Teamwork and an improved rubric. This revision was based on faculty and student input which suggested that the assessment focus on teamwork processes rather than teamwork products. A student self- and peer-assessment document and a faculty assessment document were developed that aligned with the new rubric. Faculty advice and guideline documents were created to aid the faculty in using the new assessment process.

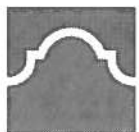
**Opportunities for Improvement**

Among the issues that should be examined as a result of the Spring 2011 assessment efforts are:

- Some faculty assessed their own students – this happened predominantly in the Performing Arts (dance, music). The Summer Institute Team will examine this practice to determine if it is appropriate.
- Some assessors were not qualified to assess the assignments in their packet. In these cases, other qualified faculty were asked to serve as assessors. This tended to happen with math and science Critical Thinking and Empirical and Quantitative Reasoning Skills assignments. This may be remedied by the decision to recruit at least one assessor from each discipline that is associated with a competency being assessed.
- There were 73 assignments that were requested but not assessed. Of these 73, 56 were due to students dropping the course, 4 assignments were submitted too late to be assessed, 6 were from faculty who did not submit assignments, 5 were assignments that could not be assessed by the rubric, and 2 were from faculty who said that they did not address the competency in their course Fall semester. The number of students dropping courses was unexpectedly high; providing for this possibility will change the next sample size. A clarification of the purpose and process of general education assessment will be provided to the Chairs for distribution and discussion purposes.
- Some faculty submitted the assignment directions or test questions but did not submit student work. There is an ongoing need to provide guidance on appropriate submissions for assessment.
- Assessors reported that the Assignment Template questions were confusing. These Assignment Templates were revised during Summer 2011.

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9/21/2011





ALAMO  
COLLEGES

**PALO ALTO COLLEGE**

- Assessors reported that some assignments were difficult to assess because the assignment did not address the outcomes and their descriptors on the rubric. Faculty are reviewing assignments for applicability to assessment goals.
- Not all assignments submitted for Empirical and Quantitative Reasoning Skills could be assessed on all three outcomes. This was not anticipated and the assignment template will be revisited.

**Related Action Plans – Closing the Loop**

All Palo Alto College faculty reviewed the Spring 2011 Assessment Findings Report and were invited to submit action plan suggestions during department meetings early Fall 2011 semester. Among the suggestions are the following:

**Increase the Sample Size**

Fall 2011 the size of the sample was increased to 125 students.

**Provide More Information on the Findings Report to Aid in Interpreting the Report**

The DL acronym was defined (Distance Learning) and information about the number of assessors judgments recorded for every assignment was included in the report.

**Have Better Training and Guidance for the Faculty**

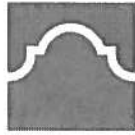
Faculty Advice for Teamwork, Faculty Guidelines for Communication Assignments, Faculty Guidelines for Teamwork Assessments, and Faculty Assessor Guidelines documents were created. A Chair Talking Points document was created to help the chairs explain the revised Teamwork assessment process. Faculty asked to provide Communication or Teamwork artifacts for their students were invited to attend face-to-face training sessions. The Outcomes Assessment website was updated to include all rubrics, templates, guidelines, and supporting files.

**Provide Individual Disciplines with Data Regarding the Material that Faculty are Submitting for Assessments**

Faculty are asking for discipline-specific feedback to aid in the editing and fine-tuning of assignments and to support the development of action plans more directly affecting student learning outcomes. The implementation of the Key Assignments initiative will assist in the improvement of assignments for the Fall 2012 general education assessment cycle.

During the 2011-2012 Academic Year, faculty in all disciplines are creating curriculum maps for each college-level course which will cross-walk course student learning outcomes to their associated Institutional General Education Competencies. Faculty are then creating and submitting Key Assignments for each course which will address the course outcome and the General Education Competency associated with that outcome. These Key Assignments must be assessable using the

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9/21/2011



ALAMO  
COLLEGES

PALO ALTO COLLEGE

rubrics for the General Education Competency. Every department has at least one faculty member who has served as an assessor. The expertise of these faculty will aid in the vetting of the Key Assignments for that department (38 full-time faculty out of 111 full-time faculty have served as General Education Competency assessors).

### Appendices

#### Appendix A

1. The Critical Thinking Skills Rubric
2. The Critical Thinking Skills Assignment Template
3. The Personal Responsibility Rubric
4. The Personal Responsibility Assignment Template
5. The Empirical and Quantitative Reasoning Skills Rubric
6. The Empirical and Quantitative Reasoning Skills Assignment Template

#### Appendix B

1. Overall Findings
2. Critical Thinking Findings
3. Personal Responsibility Findings
4. Empirical and Quantitative Reasoning Findings
5. Faculty Feedback Worksheet



**Critical Thinking Competency Outcome: Palo Alto College Students use inquiry and analysis, evaluation and synthesis of information, and innovation and creative thinking.**

<b>Specific Outcomes</b>	<b>Exceeds Expectations (3)</b>	<b>Meets expectations (2)</b>	<b>Does Not Meet Expectations (1)</b>
<p><b>Specific Outcome #1</b>  <b>Inquiry and Analysis</b>            Students pose vital questions and identify problems, formulating them clearly and precisely.</p>	<ul style="list-style-type: none"> <li>Student accurately and thoroughly states the purpose of the inquiry.</li> <li>Student poses relevant questions that thoroughly fulfill the purpose.</li> <li>Student clearly and logically expresses questions and problems in several ways to recognize complexity.</li> </ul>	<ul style="list-style-type: none"> <li>Student states the purpose of the inquiry.</li> <li>Student poses relevant questions that substantially fulfill the purpose.</li> <li>Student clearly and logically states questions and problems.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not identify the purpose of the inquiry.</li> <li>Student poses questions that do not fulfill the purpose.</li> <li>Student does not state questions and problems clearly and logically.</li> </ul>
<p><b>Specific Outcome #2</b>  <b>Evaluation and Synthesis</b>            Students consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences. Students will develop well-reasoned conclusions and solutions.</p>	<ul style="list-style-type: none"> <li>Student identifies multiple (more than two) alternative viewpoints.</li> <li>Student identifies and assesses assumptions related to the viewpoints.</li> <li>Student identifies logical, significant, potential implications and consequences of alternative viewpoints.</li> <li>Student clearly expresses multiple logical and plausible alternative conclusions and solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Student identifies two alternative viewpoints.</li> <li>Student identifies and assesses assumptions related to the two viewpoints.</li> <li>Student identifies some logical implications and consequences for each viewpoint.</li> <li>Student expresses a well reasoned logical conclusion.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not recognize alternative viewpoints.</li> <li>Student does not recognize assumptions associated with a viewpoint.</li> <li>Student does not identify implications or consequences.</li> <li>Student expresses an illogical conclusion or solution.</li> </ul>
<p><b>Specific Outcome #3</b>  <b>Creative Thinking and Innovation</b>            Students apply creative ideas or approaches to achieve solutions or complete projects.</p>	<ul style="list-style-type: none"> <li>Student creates a unique personal idea, question, format, or product.</li> <li>Student incorporates new directions or approaches to the assignment in the final product</li> </ul>	<ul style="list-style-type: none"> <li>Student creates a personal idea, question, format, or product based on an example.</li> <li>Student personalizes an example direction or approach to achieve a solution or complete a project.</li> </ul>	<ul style="list-style-type: none"> <li>Student fails to create an idea, question, format, or product from an example.</li> <li>Student makes no attempt to personalize direction or approach given an example.</li> </ul>

**\* Faculty indicate which of the three outcomes the submitted assignment addresses on the Critical Thinking Assignment template.**

Adapted from the following LEAP Value Rubrics: Creative Thinking Rubric, Critical Thinking Rubric, Inquiry and Analysis Rubric, and Problem Solving Rubric, and St. Philip's College Critical Thinking Quality Enhancement Plan <http://www.alamo.edu/spc/admin/qep/default.aspx>



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Appendix A.2

**Critical Thinking Assignment Information**

**In order to help the Assessors judge the specific outcomes for the assignment that you are submitting, please provide the following background information:**

**1. Indicate the primary Critical Thinking focus for the assignment (you may check more than one):**

- Outcome #1:** Inquiry and analysis
- Outcome #2:** Evaluation and synthesis
- Outcome #3:** Creative thinking and innovation

**2. Indicate the directions that you provided to the student for the assignment (feel free to attach your directions to this document):**

**Please send this form attached to the assignment that you are submitting for your student(s) to Pat Stone [pstone11@alamo.edu](mailto:pstone11@alamo.edu) by \_\_\_\_\_.** (need to decide when this is due)



**Personal Responsibility Competency Outcome: Palo Alto College Students connect choices, actions and consequences to ethical decision-making.**

<b>Specific Outcomes</b>	<b>Exceeds Expectation (3)</b>	<b>Meets Expectation (2)</b>	<b>Does Not Meet Expectation (1)</b>
<b>Specific Outcome #1</b> Students assess their own ethical values and identify the origin of their values.	<ul style="list-style-type: none"> <li>Student articulates an understanding of the impact the source of his or her ethical values has on his or her development.</li> </ul>	<ul style="list-style-type: none"> <li>Student states his or her own ethical values and the source of his or her ethical values.</li> </ul>	<ul style="list-style-type: none"> <li>Student states either his or her own ethical values or the source of his or her ethical values, but not both.</li> </ul>
<b>Specific Outcome #2</b> Students recognize ethical issues in the social context of problems.	<ul style="list-style-type: none"> <li>Student recognizes ethical issues when presented in a complex context.</li> </ul>	<ul style="list-style-type: none"> <li>Student recognizes basic ethical issues within a given situation and demonstrates partial understanding of their complexities.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not recognize the basic ethical issues.</li> </ul>
<b>Specific Outcome #3</b> Students analyze alternative ethical perspectives and predict the ramifications of those perspectives to a situation.	<ul style="list-style-type: none"> <li>Student applies ethical perspectives to an ethical question and specifies implications of the application of that perspective.</li> </ul>	<ul style="list-style-type: none"> <li>Student identifies two ethical perspectives of a situation and analyzes the implications of those perspectives.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not apply ethical perspectives to an ethical question.</li> </ul>

**\* Faculty indicate which of the three outcomes the submitted assignment addresses on the Personal Responsibility Assignment template.**



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PALO ALTO COLLEGE

Appendix A.4

**Personal Responsibility Assignment Information**

**In order to help the Assessors judge the specific outcomes for the assignment that you are submitting, please provide the following background information:**

1. **Indicate the primary personal responsibility focus for the assignment (you may check more than one):**

- Outcome #1:** Students assess their own ethical values and identify the origin of their values
- Outcome #2:** Students recognize ethical issues in the social context of problems.
- Outcome #3:** Students analyze alternative ethical perspectives and predict the ramifications of those perspectives to a situation.

2. **Indicate the directions that you provided to the student for the assignment (feel free to attach your directions to this document):**

**Please send this form attached to the assignment that you are submitting for your student(s) to Pat Stone [pstone11@alamo.edu](mailto:pstone11@alamo.edu) by \_\_\_\_\_.** (need to decide when this is due)



**Empirical and Quantitative Competency Outcome: Palo Alto College Students apply scientific and mathematical concepts to analyze and solve problems to investigate hypotheses.**

Specific Outcomes	Exceeds Expectations (3)	Meets Expectations (2)	Does Not Meet Expectations (1)
<p><b>Specific Outcome #1</b> <b>E &amp; Q Knowledge (Understand the Problem)</b> Students identify problems or hypotheses and related quantitative components.</p>	<ul style="list-style-type: none"> <li>Student formulates a clear description of the problem or hypothesis and correctly specifies all appropriate major quantitative components to be examined.</li> </ul>	<ul style="list-style-type: none"> <li>Student describes the problem or hypothesis and presents a list of related quantitative components to be examined.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not understand the problem or hypothesis and cannot specify quantitative components to examine.</li> </ul>
<p><b>Specific Outcome #2</b> <b>E &amp; Q Inquiry (Devises a Plan)</b> Students select appropriate quantitative approaches to analyze and solve problems and investigate hypotheses</p>	<ul style="list-style-type: none"> <li>Student selects and prioritizes all quantitative information appropriate to analyzing and solving the problem or investigating the hypothesis.</li> <li>Student identifies multiple approaches to analyzing and solving the problem or investigating the hypothesis along with the associated quantitative information.</li> </ul>	<ul style="list-style-type: none"> <li>Student selects and prioritizes a list of quantitative information appropriate to analyzing and solving the problem or investigating the hypothesis.</li> <li>Student identifies one approach to analyze and solve the problem or investigate the hypothesis along with the associated quantitative information.</li> </ul>	<ul style="list-style-type: none"> <li>Student selects quantitative information that is inappropriate to analyzing and solving the problem or to investigate the hypothesis.</li> <li>Student does not identify an appropriate approach to analyze and solve the problem or investigate the hypothesis.</li> </ul>
<p><b>Specific Outcome #3</b> <b>E &amp; Q Reasoning (Executes the Plan and Looks Back)</b> Students correctly apply quantitative approaches to analyze and solve problems or investigate hypotheses. Students summarize and reflect on their learning experiences</p>	<ul style="list-style-type: none"> <li>Student correctly applies quantitative approaches to analyze and solve the problem or to investigate the hypothesis.</li> <li>Student reflects on his/her work and identifies connections to similar problems or experiments.</li> <li>Student reflects on his/her work and identifies more efficient approaches.</li> </ul>	<ul style="list-style-type: none"> <li>Student correctly applies quantitative approaches to analyze and solve the problem or to investigate the hypothesis.</li> </ul>	<ul style="list-style-type: none"> <li>Student incorrectly applies quantitative approaches to analyze and solve the problem or to investigate the hypothesis.</li> </ul>



**A L A M O  
C O L L E G E S**

PALO ALTO COLLEGE

Appendix A.6

**Empirical and Quantitative Reasoning Assignment Information**

**In order to help the Assessors judge the specific outcomes for the assignment that you are submitting, please provide background information on the assignment (feel free to attach your assignment directions to this document).**

**Please send this form attached to the assignment that you are submitting for your student(s) to Pat Stone [psstone11@alamo.edu](mailto:psstone11@alamo.edu) , EO 130, by the Wednesday before Finals Week this semester.**



**Palo Alto College Institutional General Education Competencies Assessment**  
**Sp 2011 Findings Report: Assessment of Critical Thinking Skills, Personal Responsibility, and Empirical and Quantitative Reasoning Skills**

**Overall Findings**

Total Number of Students in the Sample:	105 students who were taking 3 or more courses Spring 11 who had completed 45 college credit hours at PAC before Spring 11 semester									
Total Number of Critical Thinking Courses Identified:	95	Core:	70	DL:	40					
Total Number of Critical Thinking Courses <b>Assessed</b> :	71 (75%)	Core:	49 (70%)	DL:	31 (78%)					
Total Number of Personal Responsibility Courses Identified:	62	Core:	62	DL:	32					
Total Number of Personal Responsibility Courses <b>Assessed</b> :	33 (53%)	Core:	33 (53%)	DL:	13 (41%)					
Total Number of Empirical and Quantitative Reasoning Courses Identified:	75	Core:	75	DL:	29					
Total Number of Empirical and Quantitative Reasoning Courses <b>Assessed</b> :	55 (73%)	Core:	55 (73%)	DL:	23 (79%)					
Total Number of Courses Identified:	232	Core:	207	DL:	101					
Total Number of Courses <b>Assessed</b> :	159 (69%)	Core:	137 (66%)	DL:	67 (66%)					
Number of Faculty Requested to Submit At Least One Assignment	116									
Additional Faculty Who Served as Assessors (Not in Above Group)	14									
Total Faculty Involved (both as submitters of assignments and assessors)	130									
7 Critical Assessment Teams	3 faculty each									
5 Personal Responsibility Assessment Teams	3 faculty each									
5 Empirical and Quantitative Reasoning Assessment Teams	3 faculty each									
Additional Information to Aid in the Interpretation of the Findings:										
DL is Distance Learning										
Every assignment was assessed by at least two assessors. A third assessor was used in cases where the assessments were polar opposites										

### Critical Thinking Findings

Total Number of Critical Thinking Courses Identified:	95	Core:	70	DL:	44
Total Number of Critical Thinking Assignments Assessed	71	0.747	49	0.7	31
<b>Comprehensive Results for Critical Thinking</b> This competency has the best #Assessed/#Identified Ratio					
Total Assessments for Outcome #1	116*	* 2 assessors/assignment			
Total Exceeds or Meets Outcome #1	97	0.836	84%		
Total Assessments for Outcome #2	106*	* 2 assessors/assignment			
Total Exceeds or Meets Outcome #2	89	0.84	84%	Strongest Outcome	
Total Assessments for Outcome #3	54*	* 2 assessors/assignment			
Total Exceeds or Meets for Outcome #3	38	0.704	70%	Weakest Outcome	
<b>Core Course Results for Critical Thinking</b>					
Total Number of Critical Thinking Core Courses Identified	70				
Total Number of Critical Thinking Core Courses Assessed	49	0.7	70%	Weakest Ratio of Assessed to Identified	
Total Assessments for Outcome #1	84*	* 2 assessors/assignment			
Total Exceeds or Meets Outcome #1	70	0.833	83%		
Total Assessments for Outcome #2	76*	* 2 assessors/assignment			
Total Exceeds or Meets Outcome #2	66	0.868	87%	Strongest Outcome	
Total Assessments for Outcome #3	38*	* 2 assessors/assignment			
Total Exceeds or Meets for Outcome #3	28	0.737	74%	Weakest Outcome	
<b>DL Course Results for Critical Thinking</b>					
Total Number of Critical Thinking DL Courses Identified	44				
Total Number of Critical Thinking DL Courses Assessed	33	0.75	75%	Strongest Ratio of Assessed to Identified	
Total Assessments for Outcome #1	58*	* 2 assessors/assignment			
Total Exceeds or Meets Outcome #1	49	0.845	85%		
Total Assessments for Outcome #2	56*	* 2 assessors/assignment			
Total Exceeds or Meets Outcome #2	48	0.867	86%	Strongest Outcome	
Total Assessments for Outcome #3	20*	* 2 assessors/assignment			
Total Exceeds or Meets for Outcome #3	14	0.7	70%	Weakest Outcome	
<b>Critical Thinking Competency Outcome: Palo Alto College Students use inquiry and analysis, evaluation and synthesis of information, and innovation and creative thinking.</b>					
<b>Specific Outcome #1 (Inquiry and Analysis):</b> Students pose vital questions and identify problems, formulating them clearly and precisely.					
<b>Specific Outcome #2 (Evaluation and Synthesis):</b> Students consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences. Students will develop well-reasoned conclusions and solutions.					
<b>Specific Outcome #3 (Creative Thinking and Innovation):</b> Students apply creative ideas or approaches to achieve solutions or complete projects.					

## Critical Thinking Rubric

Critical Thinking Competency Outcome: Palo Alto College Students use inquiry and analysis, evaluation and synthesis of information, and innovation and creative thinking.				
Specific Outcomes	Exceeds Expectations (3)	Meets expectations (2)	Does Not Meet Expectations (1)	
<p><b>Specific Outcome #1</b>  <b>Inquiry and Analysis</b>                      Students pose vital questions and identify problems, formulating them clearly and precisely.</p>	<ul style="list-style-type: none"> <li>• Student accurately and thoroughly states the purpose of the inquiry.</li> <li>• Student poses relevant questions that thoroughly fulfill the purpose.</li> <li>• Student clearly and logically expresses questions and problems in several ways to recognize complexity.</li> </ul>	<ul style="list-style-type: none"> <li>• Student states the purpose of the inquiry.</li> <li>• Student poses relevant questions that substantially fulfill the purpose.</li> <li>• Student clearly and logically states questions and problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Student does not identify the purpose of the inquiry.</li> <li>• Student poses questions that do not fulfill the purpose.</li> <li>• Student does not state questions and problems clearly and logically</li> </ul>	
<p><b>Specific Outcome #2</b>  <b>Evaluation and Synthesis</b>                      Students consider alternative viewpoints, recognize and assess assumptions, and identify possible consequences. Students will develop well-reasoned conclusions and solutions.</p>	<ul style="list-style-type: none"> <li>• Student identifies multiple (more than two) alternative viewpoints.</li> <li>• Student identifies and assesses assumptions related to the viewpoints.</li> <li>• Student identifies logical, significant, potential implications and consequences of alternative viewpoints.</li> <li>• Student clearly expresses multiple logical and plausible alternative conclusions and solutions.</li> </ul>	<ul style="list-style-type: none"> <li>• Student identifies two alternative viewpoints.</li> <li>• Student identifies and assesses assumptions related to the two viewpoints.</li> <li>• Student identifies some logical implications and consequences for each viewpoint.</li> <li>• Student expresses a well reasoned logical conclusion.</li> </ul>	<ul style="list-style-type: none"> <li>• Student does not recognize alternative viewpoints.</li> <li>• Student does not recognize assumptions associated with a viewpoint.</li> <li>• Student does not identify implications or consequences.</li> <li>• Student expresses an illogical conclusion or solution.</li> </ul>	
<p><b>Specific Outcome #3</b>  <b>Creative Thinking and Innovation</b>                      Students apply creative ideas or approaches to achieve solutions or complete projects.</p>	<ul style="list-style-type: none"> <li>• Student creates a unique personal idea, question, format, or product.</li> <li>• Student incorporates new directions or approaches to the assignment in the final product</li> </ul>	<ul style="list-style-type: none"> <li>• Student creates a personal idea, question, format, or product based on an example.</li> <li>• Student personalizes an example direction or approach to achieve a solution or complete a project.</li> </ul>	<ul style="list-style-type: none"> <li>• Student fails to create an idea, question, format, or product from an example.</li> <li>• Student makes no attempt to personalize direction or approach given an example.</li> </ul>	
Solving Rubric, and St. Philip's College Critical Thinking Quality Enhancement Plan <a href="http://www.alamo.edu/spc/admin/qep/default.aspx">http://www.alamo.edu/spc/admin/qep/default.aspx</a>				

**Personal Responsibility Findings**

Total Number of Personal Responsibility Courses Identified:	62	Core:	62	DL:	32
Total Number of Personal Responsibility Courses Assessed:	33	0.532	33	0.532	13
					0.40625

**Comprehensive Results for Personal Responsibility**

This competency has the worst #Assessed/#Identied Ratio

Total Assessments for Outcome #1	44*	*2 assessors/assi	Most Addressed & Weakest Outcome
Total Exceeds or Meets Outcome #1	30	0.682	68%
Total Assessments for Outcome #2	48*	*2 assessors/assignment	
Total Exceeds or Meets Outcome #2	41	0.854	85% Strongest Outcome
Total Assessments for Outcome #3	36*	*2 assessors/assi	Least Addressed Outcome
Total Exceeds or Meets for Outcome #3	26	0.722	72%

**Core Course Results for Personal Responsibility**

Total Number of Personal Responsibility Core Courses Identified	62		
Total Number of Personal Responsibility Core Courses Assessed	33	0.532	
Total Assessments for Outcome #1	44*	*2 assessors/assi	Most Addressed & Weakest Outcome
Total Exceeds or Meets Outcome #1	30	0.682	68%
Total Assessments for Outcome #2	48*	*2 assessors/assignment	
Total Exceeds or Meets Outcome #2	41	0.854	85% Strongest Outcome
Total Assessments for Outcome #3	36*	*2 assessors/assi	Least Addressed Outcome
Total Exceeds or Meets for Outcome #3	26	0.722	72%

**DL Course Results for Personal Responsibility**

Total Number of Personal Responsibility DL Courses Identified	32		
Total Number of Personal Responsibility DL Courses Assessed	13	0.406	41% Weakest Ratio of Assessed to Identified
Total Assessments for Outcome #1	10*	*2 assessors/assignment	
Total Exceeds or Meets Outcome #1	4	0.4	40%
Total Assessments for Outcome #2	22*	*2 assessors/assignment	
Total Exceeds or Meets Outcome #2	17	0.773	77% Strongest and Most Addressed Outcome
Total Assessments for Outcome #3	10*	*2 assessors/assignment	
Total Exceeds or Meets for Outcome #3	3	0.3	30% Weakest Outcome

**Personal Responsibility Competency Outcome:** Palo Alto College Students connect choices, actions and consequences to ethical decision-making.

**Specific Outcome #1:** Students assess their own ethical values and identify the origin of their values.

**Specific Outcome #2:** Students recognize ethical issues in the social context of problems.

**Specific Outcome #3:** Students analyze alternative ethical perspectives and predict the ramifications of those perspectives to a situation.

## Personal Responsibility Rubric

Social Responsibility Competency Outcome: Palo Alto College Students demonstrate intercultural competency, civic knowledge, and the ability to engage effectively in regional, national and global communities.			
Specific Outcomes	Exceeds Expectations (3)	Meets expectations (2)	Does Not Meet Expectations (1)
<p><b>Specific Outcome #1</b> Students assess their own ethical values and identify the origin of their values.</p>	<ul style="list-style-type: none"> <li>Student articulates an understanding of the impact the source of his or her ethical values has on his or her development.</li> </ul>	<ul style="list-style-type: none"> <li>Student states his or her own ethical values and the source of his or her ethical values.</li> </ul>	<ul style="list-style-type: none"> <li>Student states either his or her own ethical values or the source of his or her ethical values, but not both.</li> </ul>
<p><b>Specific Outcome #2</b> Students recognize ethical issues in the social context of problems.</p>	<ul style="list-style-type: none"> <li>Student recognizes ethical issues when presented in a complex context.</li> </ul>	<ul style="list-style-type: none"> <li>Student recognizes basic ethical issues within a given situation and demonstrates partial understanding of their complexities.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not recognize the basic ethical issues.</li> </ul>
<p><b>Specific Outcome #3</b> Students analyze alternative ethical perspectives and predict the ramifications of those perspectives to a situation.</p>	<ul style="list-style-type: none"> <li>Student applies ethical perspectives to an ethical question and specifies implications of the application of that perspective.</li> </ul>	<ul style="list-style-type: none"> <li>Student identifies two ethical perspectives of a situation and analyzes the implications of those perspectives.</li> </ul>	<ul style="list-style-type: none"> <li>Student does not apply ethical perspectives to an ethical question</li> </ul>
Adapted from the LEAP Ethical Reasoning VALUE Rubric			

**Empirical and Quantitative Reasoning Skills Findings**

Total Number of E and Q Reasoning Skills Courses Identified:	75	Core:	75	DL:	29
Total Number of E and Q Reasoning Skills Courses Assessed:	55	0.7333	55	0.733333	23
<b>Comprehensive Results for E and Q Reasoning Skills</b>					
Total Assessments for Outcome #1	104* *2 assessors/assignment				
Total Exceeds or Meets Outcome #1	80	0.7692	77%		
Total Assessments for Outcome #2	102* *2 assessors/assignment				
Total Exceeds or Meets Outcome #2	81	0.7941	79% Strongest Outcome		
Total Assessments for Outcome #3	104* *2 assessors/assignment				
Total Exceeds or Meets for Outcome #3	68	0.6538	65% Weakest Outcome		
<b>Core Course Results for E and Q Reasoning Skills</b>					
Total Number of E and Q Reasoning Skills Core Courses Identified	75				
Total Number of E and Q Reasoning Skills Core Courses Assessed	55				
Total Assessments for Outcome #1	104 *2 assessors/assignment				
Total Exceeds or Meets Outcome #1	80	0.7692	77%		
Total Assessments for Outcome #2	102 *2 assessors/assignment				
Total Exceeds or Meets Outcome #2	81	0.7941	79% Strongest Outcome		
Total Assessments for Outcome #3	104 *2 assessors/assignment				
Total Exceeds or Meets for Outcome #3	68	0.6538	65% Weakest Outcome		
<b>DL Course Results for E and Q Reasoning Skills</b>					
Total Number of E and Q Reasoning Skills DL Courses Identified	29				
Total Number of E and Q Reasoning Skills DL Courses Assessed	23				
Total Assessments for Outcome #1	40* *2 assessors/assignment				
Total Exceeds or Meets Outcome #1	40	1	100% Strongest Outcome		
Total Assessments for Outcome #2	38* *2 assessors/assignment				
Total Exceeds or Meets Outcome #2	32	0.8421	84%		
Total Assessments for Outcome #3	40* *2 assessors/assignment				
Total Exceeds or Meets for Outcome #3	24	0.6	60% Weakest Outcome		
<b>Empirical and Quantitative Competency Outcome: Palo Alto College Students apply scientific and mathematical concepts to analyze and solve problems to investigate hypotheses.</b>					
<b>Specific Outcome #1 E &amp; Q Knowledge (Understand the Problem) Students identify problems or hypotheses and related quantitative components.</b>					
<b>Specific Outcome #2 E &amp; Q Inquiry (Devises a Plan) Students select appropriate quantitative approaches to analyzing and solving problems and investigating hypotheses</b>					
<b>Specific Outcome #3 E &amp; Q Reasoning (Executes the Plan and Looks Back) Students correctly apply quantitative approaches to analyze and solve problems or investigate hypotheses.</b>					

## Empirical and Quantitative Reasoning Skills Rubric

Empirical and Quantitative Competency Outcome: Palo Alto College Students apply scientific and mathematical concepts to analyze and solve problems to investigate hypotheses.			
Specific Outcomes	Exceeds Expectations (3)	Meets expectations (2)	Does Not Meet Expectations (1)
<p><b>Specific Outcome #1</b>  <b>E &amp; Q Knowledge (Understand the Problem)</b>                      Students identify problems or hypotheses and related quantitative components.</p>	<ul style="list-style-type: none"> <li>• Student formulates a clear description of the problem or hypothesis and correctly specifies all appropriate major quantitative components to be examined.</li> </ul>	<ul style="list-style-type: none"> <li>• Student describes the problem or hypothesis and presents a list of related quantitative components to be examined.</li> </ul>	<ul style="list-style-type: none"> <li>• Student does not understand the problem or hypothesis and cannot specify quantitative components to examine.</li> </ul>
<p><b>Specific Outcome #2</b>  <b>E &amp; Q Inquiry (Devises a Plan)</b>                      Students select appropriate quantitative approaches to analyzing and solving problems and investigating hypotheses</p>	<ul style="list-style-type: none"> <li>• Student selects and prioritizes all quantitative information appropriate to analyzing and solving the problem or investigating the hypothesis.</li> <li>• Student identifies multiple approaches to analyzing and solving the problem or investigating the hypothesis along with the associated quantitative information.</li> </ul>	<ul style="list-style-type: none"> <li>• Student selects and prioritizes a list of quantitative information appropriate to analyzing and solving the problem or investigating the hypothesis.</li> <li>• Student identifies one approach to analyze and solve the problem or investigate the hypothesis along with the associated quantitative information.</li> </ul>	<ul style="list-style-type: none"> <li>• Student selects quantitative information that is inappropriate to analyzing and solving the problem or to investigate the hypothesis.</li> <li>• Student does not identify an appropriate approach to analyze and solve the problem or investigate the hypothesis.</li> </ul>
<p><b>Specific Outcome #3</b>  <b>E &amp; Q Reasoning (Executes the Plan and Looks Back)</b>                      Students correctly apply quantitative approaches to analyze and solve problems or investigate hypotheses. Students summarize and reflect on their learning experiences</p>	<ul style="list-style-type: none"> <li>• Student correctly applies quantitative approaches to analyze and solve the problem or to investigate the hypothesis.</li> <li>• Student reflects on his/her work and identifies connections to similar problems or experiments.</li> <li>• Student reflects on his/her work and identifies more efficient approaches.</li> </ul>	<ul style="list-style-type: none"> <li>• Student correctly applies quantitative approaches to analyze and solve the problem or to investigate the hypothesis.</li> </ul>	<ul style="list-style-type: none"> <li>• Student incorrectly applies quantitative approaches to analyze and solve the problem or to investigate the hypothesis.</li> </ul>

Carlton College FIPSE Proposal, "Quantitative Inquiry, Reasoning, and Knowledge to Strengthen the Educational Foundations of Citizenship"

## Appendix B.5

### Feedback for Improvement

Write suggestions for improvement for the Palo Alto College General Education Assessment of Critical Thinking Skills, Personal Responsibility, and Empirical and Quantitative Reasoning Skills Spring 2011

1. Review the data on the **Overall Results tab on the Findings Report Sp 11 Spreadsheet** and the **Findings Analysis Document**.

Provide any suggestions that would improve our assessment findings or our assessment process for our next cycle of these general education competencies:

2. Review the data on **Critical Thinking tab on the Findings Spreadsheet** along with the **Critical Thinking Rubric and Assignment Template**.

Provide any suggestions that would improve our assessment findings or our assessment process for our next assessment cycle of this general education competency:

3. Review the data on **Personal Responsibility tab on the Findings Spreadsheet** along with the **Personal Responsibility Rubric and Assignment Template**.

Provide any suggestions that would improve our assessment findings or our assessment process for our next assessment cycle of this general education competency:

4. Review the data on the **Empirical and Quantitative Reasoning Skills Findings Spreadsheet** along with the **Empirical and Quantitative Reasoning Skills Rubric and Assignment Template**.

Provide any suggestions that would improve our assessment findings or our assessment process for our next assessment cycle of this general education competency: