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PALO ALTO COLLEGE

2016-17 General Education Assessment Report
Core Objectives: Personal Responsibility and Social Responsibility

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I. History of General Education Assessment at Palo Alto College

In the summer of 2010, Palo Alto College (PAC) convened an Academic Assessment Committee (AAC) composed of faculty, academic deans and chairs, the Vice President of Academic Success, and the Director of Instructional Professional Development. The committee was charged with designing a General Education assessment model that incorporated direct and indirect assessment, established benchmarks for student achievement, and aligned the general education assessment requirements of the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) with the Texas Higher Education Coordinating Board (THECB) requirements for Core Curriculum assessment.

Guided by best practices in assessment at other institutions, the AAC created a model that incorporated embedded assignments and direct assessment of work done by students close to graduation. The model also included indirect assessment through cross walking the core curriculum objectives to survey items on the Community College Survey of Student Engagement (CCSSE) results and the annual Palo Alto College Graduation Survey.

Following the THECB guidelines for core curriculum learning outcomes, the AAC developed the Palo Alto College definition for each of the six General Education (also Core Curriculum) objectives (Critical Thinking, Communication, Empirical and Quantitative, Teamwork, Social Responsibility, and Personal Responsibility). After research into existing college assessment rubrics for these learning outcomes, the committee created a Palo Alto College rubric for each of the six general education learning outcomes, each of which detailed the performance criteria.

Initially, it was decided to begin assessing three core objectives each semester. In the fall of 2010, Communication, Social Responsibility, and Teamwork were assessed; and in the spring of 2011, Critical Thinking, Empirical & Quantitative Reasoning and Personal Responsibility were assessed.

Beginning in academic year 2011-2012, PAC initiated a cycle in which two of the six core objectives are assessed each year (see Assessment Schedule, Appendix A). This cycle met SACSCOC and THECB requirements and made efficient use of college resources. Academic year 2015-2016 marked the seventh cycle of General Education Assessment at Palo Alto College. The objectives of Critical Thinking Skills and Empirical & Quantitative Reasoning Skills were assessed.

II. Process and Procedures of General Education Assessment

A. Rubrics

Empirical & Quantitative Reasoning Skills and Critical Thinking Skills were initially assessed in the spring of 2011. Both rubrics included just three student learning outcomes or criteria. Feedback was clear that faculty desired a more granular breakdown of the criteria to enhance clarity for faculty assessors. In the summer of 2012, the chairs of the math and natural sciences department were called upon to take the lead for the redesign of the Empirical & Quantitative rubric; and a more discipline-diverse group worked on revising the Critical Thinking rubric. The composition of the groups differed because every college-level course is responsible for the Critical Thinking Skills core objective according to the THECB, whereas only three disciplines are responsible for Empirical & Quantitative Skills. After extensive research and dialogue, the Critical Thinking Skills rubric was expanded from three learning criteria to seven, and the Empirical & Quantitative rubric was expanded from three to five.

In the same summer 2012 assessment work, the performance range on five of the six core objective rubrics was improved to a four-point scale: "Highly Competent," "Mostly Competent," "Needs Improvement," and "Not Competent." A number was assigned to performance for each outcome, from 4, Highly Competent, to 1, Not Competent. A "Not Assessable" (NA) option was also added.

The performance range for Critical Thinking was set to the four-point scale, as mentioned above. In contrast, the performance range for the Empirical & Quantitative Rubric was increased from three to five performance levels: "Excellent," "Good," "Average," "Marginal," "Poor," and "Not Present," a score comparable to "Not Assessable" on the other rubrics. A number was assigned to each performance level, from 5, Excellent, to 1, Poor. (See Appendix B and Appendix C for Critical Thinking and Empirical & Quantitative rubrics.)

Although the student artifacts provided for assessment were generated by faculty assignments that, over time, have improved in breadth, faculty assessors still found occasions when an artifact was not assessable for all criteria in a given rubric. Faculty "key assignments," created for general education assessment, continue to be targeted for improvement.

B. Sampling Method

To be eligible for assessment, students must meet three criteria: 1) have earned 45 or more college-level credit hours, 2) were enrolled in the previous 16-week semester at Palo Alto, and 3) are currently enrolled. Furthermore, students must be taking a course responsible for addressing one or both of the two core objectives being assessed in the current cycle. These courses are determined using the THECB's *Core Objectives and Foundational Component Areas Mapping* table (Appendix E).

In 2016-17, the Institutional Research, Planning, and Effectiveness (IR) office generated the list of eligible students. ... students were eligible for assessment of Personal Responsibility and ... were eligible for assessment of Social Responsibility. From that list a random sample of 50% of students were chosen for

each of the two core objectives. That meant ... students were chosen randomly for Personal Responsibility and ... for Social.

An increased sample size was decided upon due to the low return rate from the past two assessment cycles, 2014-15 and 2015-16, when less than 50% of student artifacts were collected from the original sample.

C. Setting Benchmarks

For academic year 2015-16, the expectation for critical thinking skills was set as follows: 70% of the students will earn a performance rating of "Mostly Competent" (a level 3 rating), or higher. For empirical & quantitative reasoning, the expectation was set at the same level: 70% of students will earn a rating of "Average" (a level 3 rating), or higher.

Faculty feel this rating is comparable to that which shows successful completion of a college level course and therefore is appropriate for assessment of the college, itself. However, this target remains subject to ongoing review.

D. Key Assignments and Collecting Artifacts

A spreadsheet of the student sample was emailed to faculty in mid-September, 2015. Faculty were asked to have a "key assignment" within each of their courses that would be assessable for the general education outcome for which that course was responsible and which would be completed by every student in class. Those faculty who had students in the sample were asked to provide each student's completed, ungraded, key assignment with student identifiers removed. These were accompanied by the assessment coversheet (Appendix F), a description of the assignment as provided to students, and rubrics for the assignment as provided to students.

Faculty were given the option to scan and email the assignment(s) or to hand deliver them to the Coordinator of Student Success in the Division of Academic Success. The target date for submission was the last week of the semester before winter break.

E. Selecting and Training Faculty Assessors

2015-16 marked the second assessment cycle in which all faculty were placed on a rotating roster, with one-third of the faculty enlisted as faculty assessors each academic year. Faculty assessors were placed on scoring teams consisting of three faculty members, selected to align disciplines with the core objective to be assessed.

Each team received training in the fall to include: 1) Review of the core objective rubrics used to score student assignments; 2) Norming exercises for each team through scoring sample student assignments; 3) Discussing scoring outliers in order to mitigate scoring variances; and 4) Review of faculty assessor responsibilities.

F. Scoring Methodology

Faculty scoring teams receive a set of student assignments to score and a scoring coversheet (Appendix G). Faculty assessors on each team may either review the assignments as a group or review them independently, but each team will submit, for each student artifact, one collaborative score for each rubric criterion. Scores are given as whole numbers, one through four, as provided on the core objective rubric. Faculty assessors may also assign a "Not Assessable" (NA) for those outcomes for which the assignment did not provide the student an opportunity to demonstrate proficiency. One faculty member from each team is selected as the lead and uses the scoring coversheet to provide the collaborative scores for each rubric criterion.

G. Indirect Assessments

Multiple measures are used to triangulate evidence of student proficiency in the core objectives. In addition to the direct measure taken by assessing student key assignments, indirect measures are taken from the results of the Community College Survey of Student Engagement (CCSSE) and the Palo Alto College Graduation Survey.

III. Findings Report

A. General Education

The data were reported for each general education outcome, a score provided for each criterion in the rubric. Results were also disaggregated by core curriculum courses and distance learning courses. These findings are slated to be shared with faculty in fall 2016.

1) Critical Thinking Skills Findings

Seventy-six faculty members were contacted and asked to submit assignments for assessment of the critical thinking objective. Thirty-six faculty members, or 47%, submitted student assignments. Fifty-one critical thinking assignments were assessed. Thirty-nine of the assignments were from core courses and sixteen were presented through distance learning. Nine of the sixteen distance learning courses were also core courses. An additional three assignments were collected from hybrid courses.

The following chart provides the criteria for the critical thinking rubric.

Figure 3.1 Critical Thinking Criteria

No.	Criteria	Highly Competent Rubric Language
1.1	Problem or issue: Identification	Clearly identified, explicit
2.1	Analysis of Problem, Issue, or Investigation: Method(s)	Selected & used appropriately
2.2	Analysis of Problem, Issue, or Investigation: Alternate points of view	Thoroughly considered multiple alternate points of view
3.1	Credibility of Resources or Source Material: Resources; source materials	Appropriate & relevant (number, content, credibility)
4.1	Conclusion or Problem Solution: Integration	Ideas well integrated into a coherent argument, solution, presentation, etc.
4.2	Conclusion or Problem Solution: Conclusions, Solutions	Conclusions, solutions based on evidence/sound methods
5.1	Creativity: Creativity and Innovation	Fresh ideas, reflecting in-depth student engagement with the topic

Criteria 1.1 and 2.1 received the highest average rating of 3.1. Criterion 5.1 received the lowest rating at 2.5. The overall average rubric rating for critical thinking was 2.9. Of the assessed assignments, 53% either met or exceeded expectations overall.

With regard to Core Curriculum courses (39 assignments), the highest scoring criterion for critical thinking assignments was 1.1 – Identification of the problem/issue – with an average performance of 3.23. 67% of students earned Mostly Competent or higher for this criterion. Criterion 5.1 – Creativity and Innovation (Fresh ideas, in-depth student engagement with the topic) – received the lowest average rating of 2.48. 33% of students earned Mostly Competent or higher for criterion 5.1.

For Distance Learning courses (16 assignments), criterion 2.1 – Analysis of Problem, Issue, or Investigation – received the highest scoring average of 3.0, and 75% of students met the target. Criterion 5.1 received the lowest average rating of 2.38, and 31% of students met the target.

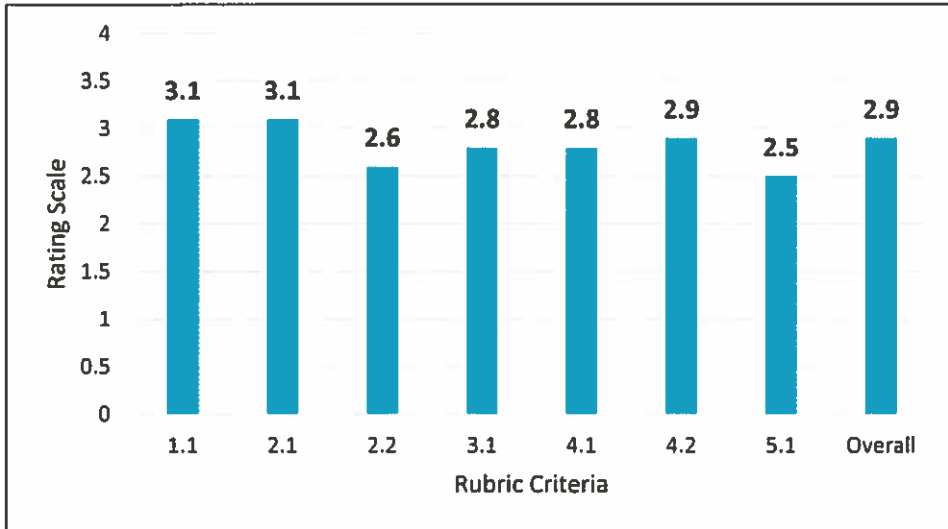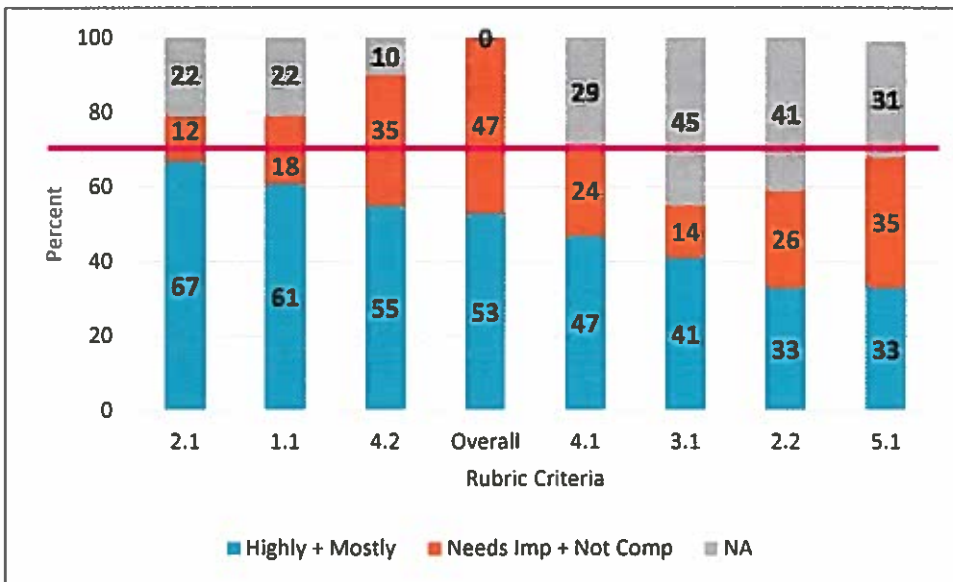**Figure 3.2 Critical Thinking Overall Average Rating for each Criterion**

Figure 3.3 Critical Thinking Overall Percent of Students Meeting Target

In Figure 3.4, the critical thinking rubric criteria are arranged in order from highest percentage to lowest with regard to the percent of students achieving the target rating of Highly Competent (performance level 4) or Mostly Competent (level 3). The bottom portion of the bar, or the blue section, represents the percent of students that scored Highly Competent (4) or Mostly Competent (3), the middle (orange) represents the percent that scored Needs Improvement (2) and Not Competent (1), and the top portion

(gray) represents the percent of assignments for which the rubric criteria was Not Assessable (NA). The red line marks the goal for achievement, 70% of students.

There were no criteria for which students achieved the baseline target of 70%. Criteria 2.1 had the highest percent of students achieving the target performance levels at 67%. Within criteria 2.1, 12% of students scored Needs Improvement (2) or Not Competent (1), and 22% of the assignments were Not Assessable for that rubric criteria.

The rubric criteria with the lowest percentage of students achieving the target ratings were criteria 2.2 and 5.1, with just 33%. Criteria 2.2 and 3.1 each had a large percentage of assignments that were rated NA, 41% and 45%, respectively.

Initial Analysis (before faculty review and feedback):

The new chart design should be incorporated into all future reports, as it provides much more information than earlier versions. That these results, under the more robust and granular Critical Thinking Rubric, show no students achieving the benchmark may demonstrate the real value in this set of criteria. It has been suspected in several earlier cycles of assessment that the skill levels for general education seemed too high to allow for some understanding of where improvements were needed.

Under this rubric, for example, it is very interesting to note that as the critical thinking criteria increase in higher level thinking requirements, the percentage of students reaching the benchmark goal of three or above declines while the number of "not assessable" ratings increases. Faculty may see this as two manifestations of one issue: students need additional opportunities in class to exercise their higher-order critical thinking skills and if the key assignments do not provide that opportunity (and this should be corrected), this may indicate a general dearth of opportunities in general.

Again, that this evidence is surfacing suggests that the new rubric has improved the assessment process. Faculty have moved forward and now have evidence to suggest how to move forward again.

2) Empirical & Quantitative Reasoning Skills Findings

Forty-seven faculty members were contacted and asked to submit assignments for assessment of the empirical & quantitative skills objective. Twenty-two faculty members, or 47%, submitted student assignments. Fifty-two empirical & quantitative assignments were submitted for assessment. Six of those assignments were found to be entirely unassessable by the empirical & quantitative reasoning skills rubric. Of the remaining forty-six assignments, 43 were from core courses and 10 from distance learning courses, 7 courses were both core and distance. An additional 5 courses were collected from hybrid courses.

The following chart provides the student learning criteria from the empirical & quantitative core objective rubric.

Figure 3.5 Empirical & Quantitative Skills Criteria

1.	Identification – The extent to which the understanding of the

		nature of the inquiry and the desired outcome(s) of analysis is indicated. Identification clearly pinpoints what information is being sought and what kind of analysis is required.
2.	**Assimilation** – The extent to which the information required for analysis is assimilated and identified. Assimilation reflects whether all necessary information is presented and used, whether the organization is logical, and whether any outside information should be integrated into the current assignment.
3.	**Analysis** – The relevance of the steps taken toward achieving the desired outcomes, the logic and clarity within the presented methods, and the consistency and accuracy of the presented information.
4.	**Presentation** – The point at which a clear conclusion and/or supplemental materials (e.g. graphs, pictures, etc.) are presented
5.	**Application** – The extent to which the results of analysis are applied to answer or address the hypothesis or problem.

The highest scoring outcome overall was criterion one. The average score was 3.7 (on a 5-point scale) and 84.8% of assessed assignments achieved a score of Average (3) or higher. The lowest scoring criterion overall was outcome 4. The average rubric rating was 3.2 and 67.4% of assessed assignments either met or exceeded expectations.

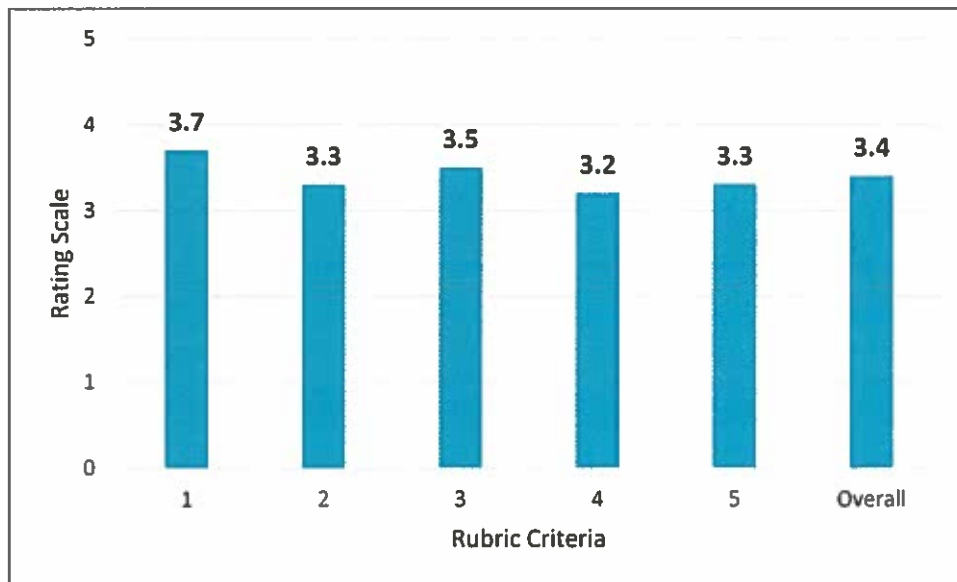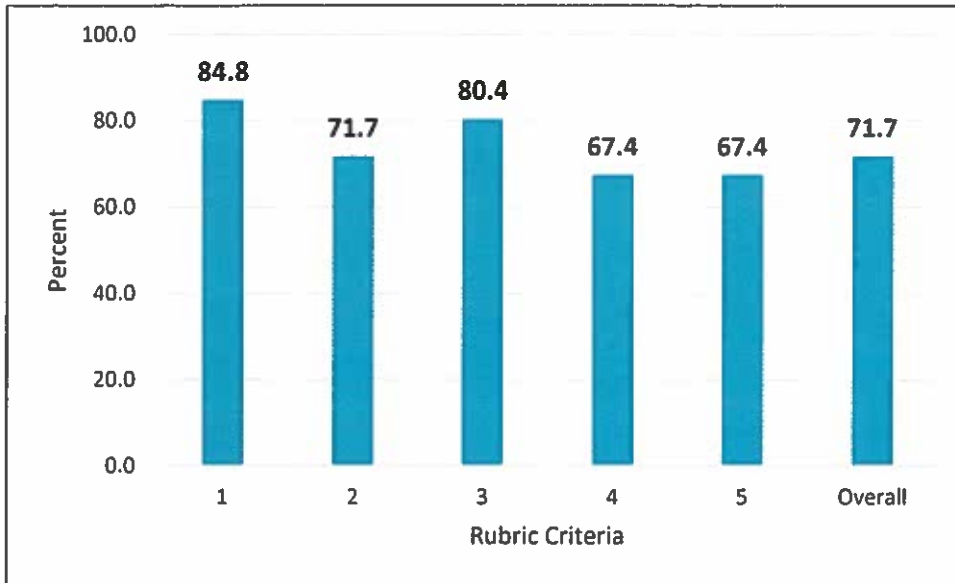**Figure 3.6 Empirical & Quantitative Overall Average Rating for each Criterion**

Figure 3.7 Empirical & Quantitative Overall Percent Achieving Target

For Core Curriculum courses, the highest scoring criterion for empirical & quantitative assignments was also criterion one: 83.7% of assessed Core Curriculum empirical & quantitative assignments either met or exceeded expectations for that outcome. The lowest scoring empirical & quantitative criterion for Core Curriculum courses was criterion five: 65.1% of assessed Core Curriculum empirical & quantitative assignments either met or exceeded expectations for that outcome.

For Distance Learning courses (10 assignments), the highest scoring criterion for empirical & quantitative assignments was criterion one, with an average rating of 3.7. Ninety percent of assessed Distance Learning empirical & quantitative assignments either met or exceeded expectations for that outcome. The lowest scoring criterion for Distance Learning empirical & quantitative assignments was criterion two, with an average rating of 3.2. 80% of assessed Distance Learning assignments either met or exceeded expectations for criterion two.

Figure 3.8. Empirical & Quantitative Overall Percent Achieving Target
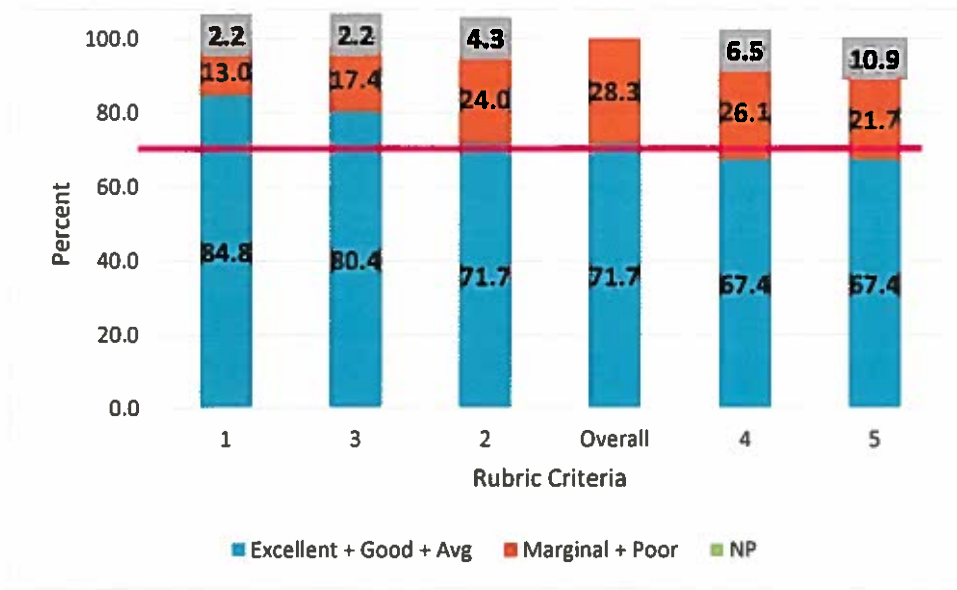
B. CCSSE

Palo Alto College participates in the CCSSE survey during the spring of odd-numbered years. The CCSSE is designed to provide student perspectives on the learning environment at PAC. Faculty aligned customized CCSSE questions to the six core objective areas (Appendix H). Students responding to the CCSSE answer questions pertaining to the development of their critical thinking skills, their ability to write and speak well, their opportunities for teamwork, their use of support services at the college, the level of support faculty and staff provide, and the intellectual rigor of their classes.

The CCSSE rating scale varies among question sets. Figure 3.8 displays the possibilities on questions pertaining to the core objective alignment.

Figure 3.9 CCSSE Rating Scale Examples

1	Never	Very Little	None	None
2	Sometimes	Some	1-4 papers	1-5 hours
3	Often	Quite a Bit	5-10 papers	6-10 hours
4	Very Often	Very Much	11-20 papers	11-20 hours
5			< 20 papers	< 30 hours

Because some CCSSE questions require a response on a four-point scale and other questions require response on a five-point scale, all items were rescaled to a four-point scale for ease of communication.

Figure 3.9 provides the results of the CCSSE questions which are aligned to each of the six general education learning outcomes for years 2011, 2013, and 2015.

Figure 3.10 CCSSE Results
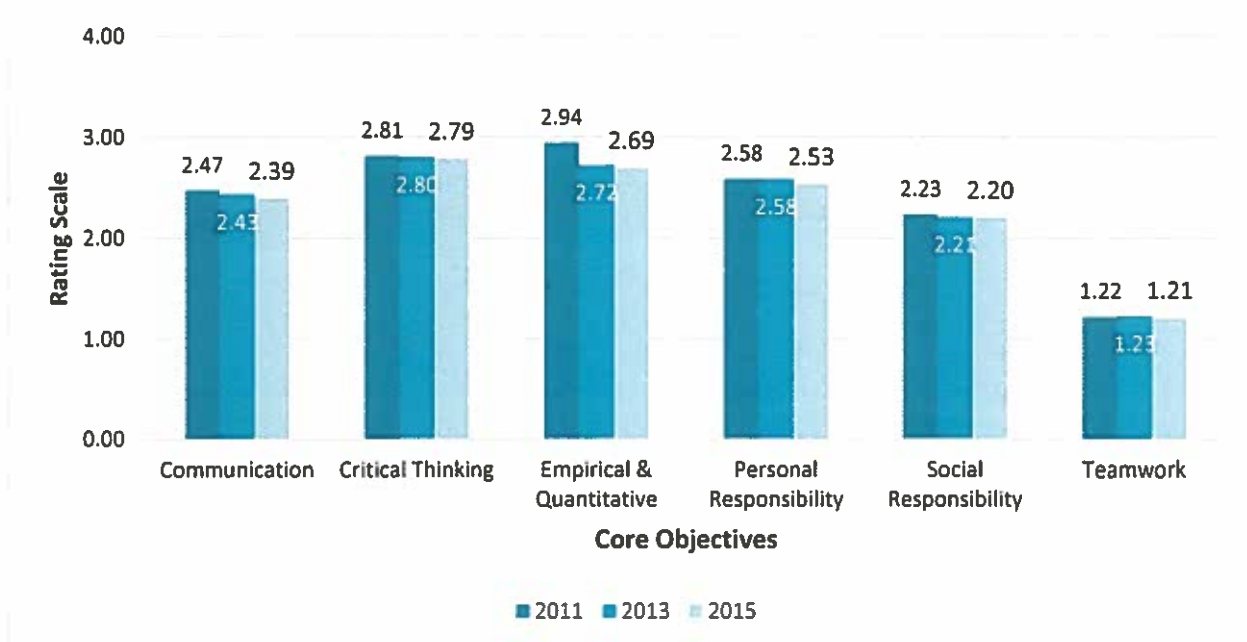
Critical thinking received the highest mean rating of all core objectives assessed through the CCSSE questions in 2013 and 2015, with ratings of 2.8 and 2.79. The mean score for critical thinking has remained fairly constant over the three years indicated, although it was slightly lower in 2015.

In 2011, critical thinking took second place to empirical and quantitative reasoning, which scored a 2.94 to critical thinking's 2.81. However, in succeeding years, empirical and quantitative reasoning ranked second behind critical thinking. In 2013, its rating was 2.72, and in 2015, 2.69.

Critical thinking and empirical and quantitative reasoning have received the top two mean ratings each year of the CCSSE survey.

C. Graduation Survey

The graduation survey provides a second indirect measure for general education outcomes (Appendix I). Students registering for graduation are asked to complete a survey which includes questions regarding their perception of the degree to which their experience at Palo Alto College contributed to their attainment of the general education (core curriculum) objectives. Students rate their perception on a 5-point scale, Strongly Disagree to Strongly Agree.

Figure 3.11 May 2015 Graduation Survey Results
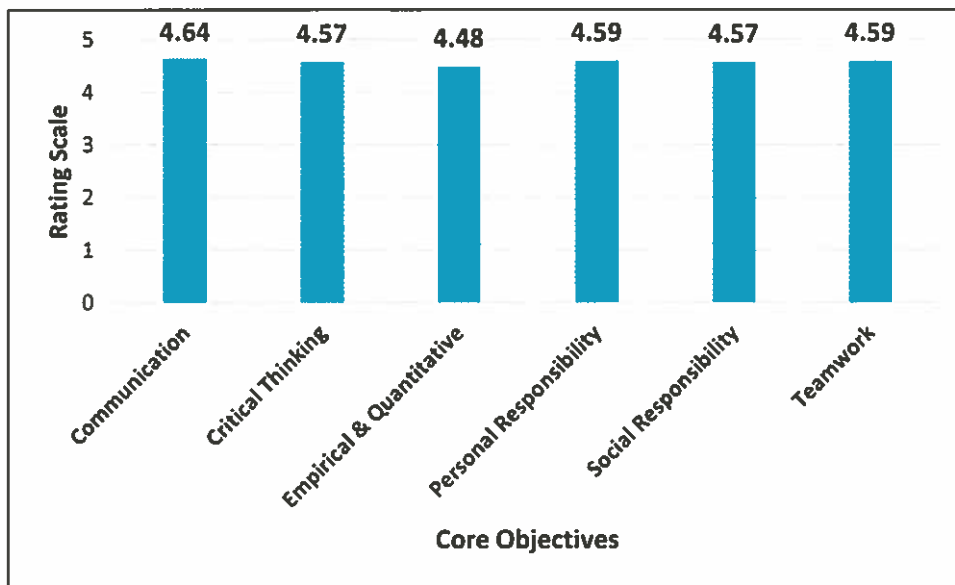
Critical Thinking received an average rating of 4.57, or 91% on a 100 scale, on the end-of-year Graduation Survey. Out of the six General Education competencies graduating students were asked about, Critical Thinking ranked fifth, a ranking it share with Social Responsibility. Empirical & Quantitative Reasoning received the lowest average rating on the Graduation Survey with a rating of 4.48, or 90%.

Conversely, Critical Thinking and Empirical and Quantitative Reasoning received the two *highest* average ratings on the spring 2015 CCSSE survey, rating 2.79 (70%) and 2.69 (67%), respectively. The incongruity of these results may be a point for discussion with faculty. A

IV. Recommendations (faculty review and analysis pending fall 2017 meetings)

A. Key Assignments

Key assignments need continual review and revision so as to address all criteria on the core objective rubric. Faculty have suggested that course instructors collaborate on the development of a common assignment. **I believe we had a Convocation Week session to do this. I will confirm.

The number of artifacts submitted compared to the number requested is very low. A review of the student list against those artifacts submitted will tell us how much of the loss is due to students dropping their class of other faculty issues. In either case, the sample size needs to be enlarged. Sometimes Joseph has the data on how many students were no longer in class...does it exist for this year?

B. Teamwork Objective

The teamwork results seem improbably high. Assessment of teamwork appears to be in need of improvement. The teamwork rubric should be reviewed by faculty as well as the key assignments currently used to assess teamwork. The incongruity between the results of directly assessing the student artifacts and the indirect measures (CCSSE and the Graduation Survey) also suggests that the assessment of teamwork should be reviewed and improved.

C. Indirect Measures

With respect to the use of CCSSE as an indirect measure for general education assessment, a review of the alignment of CCSSE items may be in order to ensure proper alignment to the core objectives. There may be CCSSE questions to either remove or add to each category of general education learning outcome, improving the relevance of the results. Institutional research will facilitate this discussion in fall 2016, before administration of spring 2016 CCSSE.

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V. Appendices

General Education Competencies Assessment Schedule

Semester	Competencies Assessed
Fall 2011	Communication Skills Teamwork
Fall 2012	Critical Thinking Skills Empirical and Quantitative Reasoning Skills
Fall 2013	Social Responsibility Personal Responsibility
Fall 2014	Communication Skills Teamwork
Fall 2015	Critical Thinking Skills Empirical and Quantitative Reasoning Skills
Fall 2016	Social Responsibility Personal Responsibility
Fall 2017	Communication Skills Teamwork
Fall 2018	Critical Thinking Skills Empirical and Quantitative Reasoning Skills
Fall 2019	Social Responsibility Personal Responsibility
Fall 2020	Communication Skills Teamwork
Fall 2021	Critical Thinking Skills Empirical and Quantitative Reasoning Skills

Appendix B

Critical Thinking Rubric

Critical Thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and formulating an opinion or conclusion.

*Code: NA = Not Applicable (i.e. not in the assignment)

Specific	Highly Competent (4)		Mostly Competent (3)		Needs Improvement (2
1. Problem or Issue					
1.1 Identification	Clearly identified, explicit		Identified implicitly or incompletely described		Problem or issue present, but a little ambiguous
2. Analysis of Problem, Issue, or Investigation					
2.1 Method(s)	Selected & used appropriately		Some inappropriate choice or use of method(s)		Choice, use of method(s) needs improvement
2.2 Alternate points of view	Thoroughly considered multiple alternate points of view		Thoroughly considered attention to one alternate view		Some attention to at least one alternate view
3. Credibility of Resources or Source Material					
3.1 Resources, source materials	Appropriate & relevant (number, content, credibility)		Most resources, sources relevant, appropriate credible		Some resources, source materials are relevant, appropriate, credible
4. Conclusion or Problem Solution					
4.1 Integration	Ideas well integrated into a coherent argument, solution, presentation, etc.		Ideas integrated into a somewhat coherent piece		Some connections to a few ideas are made
4.2 Conclusions, Solution(s)	Conclusions, solutions based on evidence/sound methods		Most conclusions, solutions based on evidence		Some unwarranted conclusions drawn, or some solution errors
5. Creativity					
5.1 Creativity, Innovation	Fresh ideas, reflecting in-depth student engagement with the topic		Some new insights, reflects some in depth consideration of topic		Very few new insights; primarily based on collection & repetition of other people's ideas, products, images
Comments: (continue on the back if needed)					

Special thanks to the University of Minnesota at Duluth

Empirical & Quantitative Reasoning Skills Rubric

Specific Outcomes	Excellent (5)	Good (4)	Average (3)	Marginal (2)	Poor (1)+	NP
Identification – The extent to which the understanding of the nature of the inquiry and the desired outcome(s) of analysis is indicated. Identification clearly pinpoints what information is being sought and what kind of analysis is required.	The purpose, components, and variables of the investigation/project are **clearly identified.**	The purpose, components, and variables of the investigation/project are **identified.**	The purpose, components, and variables of the investigation/project are **mostly identified.**	The purpose, components, and variables of the investigation/project are **somewhat identified.**	The purpose, components, and variables of the investigation/project are **not identified.**	Outcome not present in artifact.
Assimilation – The extent to which the information required for analysis is assimilated and identified. Assimilation reflects whether all necessary information is presented and used, whether the organization is logical, and whether any outside information should be integrated into the current assignment.	The information that is required for an analysis of all investigative components is **clearly evident. If** applicable, **values are** correctly translated into variables and **all necessary** formulas are present.	The information that is required for an analysis of all investigative components is **evident. If** applicable, **most values are** correctly translated into variables and **necessary** formulas are present.	The information that is required for an analysis of all investigative components is **mostly evident. If** applicable, **some values are** correctly translated into variables and **most necessary** formulas are present.	The information that is required for an analysis of all investigative components is **somewhat evident.** If applicable, **values are incorrectly** translated into variables and **some necessary** formulas are present.	The information that is required for an analysis of all investigative components is **not evident. If** applicable, values are **incorrectly** translated into variables and **no necessary** formulas are present.	Outcome not present in artifact.
Analysis – The relevance of the steps taken toward	All investigative or quantitative components **are**	All investigative or quantitative components **are**	All investigative or quantitative components are	**Some** investigative or quantitative components are	**Most** investigative or quantitative components are **not**	Outcome not present in

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Specific Outcomes	Excellent (5)	Good (4)	Average (3)	Marginal (2)	Poor (1)+	NP
achieving the desired outcomes, the logic and clarity within the presented methods, and the consistency and accuracy of the presented information.	methodically scrutinized. The steps followed are logical and relevant to the desired result. The proper tools/technology were used and well integrated into the final product. Any notation is consistent and well defined.	scrutinized. The steps followed are logical and relevant to the desired result. The proper tools/technology were used and mostly integrated into the final product. Any notation is consistent and well defined.	somewhat scrutinized. The steps followed are mostly logical and relevant to the desired result. The proper tools/technology were mostly used and somewhat integrated into the final product. Any notation is mostly consistent and well defined.	scrutinized. Some steps followed are somewhat logical and relevant to the desired result. The proper tools/technology were somewhat used, but not integrated into the final product. Any notation is somewhat consistent but not defined .	scrutinized. The steps followed are illogical and/or irrelevant to the desired result. The proper tools/technology were not used and/or integrated into the final product. Any notation is not consistent and not defined.	artifact.
Presentation – The point at which a clear conclusion and/or supplemental materials (e.g. graphs, pictures, etc.) are presented.	A concise summary of the analysis is presented. The presented information is correct, of high quality, and the terminology/figures are accurate and easy to understand. All visual representations of evidence are well-scaled and well represent the analysis findings.	A good summary of the analysis is presented. The presented information is correct, of good quality, and the terminology/figures are accurate and easy to understand. Most visual representations of evidence are well-scaled and/or well represent the analysis findings.	A summary of the analysis is presented. The presented information is mostly correct, of good quality, and the terminology/figures are mostly accurate and easy to understand. Most visual representations of evidence are acceptably scaled and represent the analysis findings.	A partial summary of the analysis is presented. The presented information is somewhat correct, of adequate quality, and the terminology/figures are somewhat accurate and relatively easy to understand. Some visual representations of evidence are acceptably scaled and represent the analysis findings.	A summary of the analysis is either inadequately presented or not presented at all. The presented information is mostly incorrect, and/or of poor quality, and/or the terminology/figures are inaccurate and/or hard to understand. Few or no visual representations of evidence are acceptably scaled or represent the analysis findings.	Outcome not present in artifact.
Application – The extent to which the	The coherent integration of all	The coherent integration of all	The coherent integration of most	The integration of most steps of the	The integration does not include all steps	Outcome not

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Specific Outcomes	Excellent (5)	Good ((4)	Average (3)	Marginal (2)	Poor (1)+	NP
results of analysis are applied to answer or address the hypothesis or problem.	**steps** of the investigation lead to an accurate, complete, relevant conclusion that is relative to the initial investigative statement.	**steps** of the investigation lead to an accurate, **mostly** complete, relevant conclusion that is relative to the initial investigative statement.	**steps** of the investigation lead to an accurate, **mostly complete,** acceptable conclusion that is relative to the initial investigative statement.	investigation lead to a **somewhat accurate, partially complete** conclusion that is relative to the initial investigative statement.	of the investigation and **does not** lead to an accurate, nor complete conclusion that relates to the initial investigative argument.	present in artifact.

Recommendation 4: Map Core Curriculum Objectives to Foundational Component Areas.

Any course developed and approved for use in an institution's core curriculum must address at least three of the Core Objectives, mapped to specific Foundational Component Areas (see Table 1). Institutions must include the required Core Objectives designated for a particular Foundational Component Area, and may include any additional Core Objectives (designated as optional on the chart) for that Foundational Component Area.

Table 1: Core Objectives and Foundational Component Areas Mapping

Foundational Component Areas	Core Objectives					
	Critical Thinking	Communication Skills	Empirical & Quantitative Skills	Teamwork	Social Responsibility	Personal Responsibility
Communication	REQUIRED	REQUIRED	OPTIONAL	REQUIRED	OPTIONAL	REQUIRED
Mathematics	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL
Life & Physical Sciences	REQUIRED	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL
Language, Philosophy and Culture	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	REQUIRED	OPTIONAL
Creative Arts	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	REQUIRED	OPTIONAL
American History	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	REQUIRED	REQUIRED
Government/ Political Science	REQUIRED	REQUIRED	OPTIONAL	REQUIRED	REQUIRED	OPTIONAL
Social/Behavioral Science	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	REQUIRED	REQUIRED
Institutional Option*	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL

* Institutional Option must contain a minimum of 3 Core Objectives selected by the institution.

REQUIRED = required Core Objectives to be addressed in each course selected for inclusion in the Foundational Component Area.
OPTIONAL = institution may include Core Objective for each course selected for inclusion in the Foundational Component Area.

Taken from THECB Report "Revising the State Core Curriculum: A focus on 21st century competencies," April 2011.

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Appendix E

Student Artifact Key Assignment Cover Sheet

Course: _____ Faculty Name: _____ Date: _____

Core ☐ or Non-Core ☐   Face to Face ☐   On-Line ☐   Hybrid ☐   IVC ☐   Telecourse ☐

Assignment Description-indicate the assignment directions you provided the student (attach additional information if necessary):

General Education Competencies addressed by the assignment (indicate with an X):

_____ Critical Thinking   _____ Empirical and Quantitative Skills

Please select the specific outcomes present in the artifact. Leaving the outcome unchecked will result in the Gen Ed Assessor selecting N/A (Indicate with an X in the checkbox):

Empirical and Quantitative Skills Artifact:

Identification ☐	Assimilation ☐	Analysis ☐	Presentation ☐	Application ☐

Critical Thinking Skills Artifact:

Identification ☐	Method ☐	Alternate Points of View ☐	Resources/Source Materials ☐	Integration ☐	Conclusions/Solutions ☐	Creativity ☐

Scan and email the completed key assignment cover sheet and the ungraded student assignment for each student to Dolores Zapata, dzapata@alamo.edu prior to the end of the Fall 2015 term.

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Appendix F

Master Scoring Sheet

Artifact Code_____ Serial Code: _____ 1 Rating_____ 2 Rating_____ 3 Rating_____ 4 Rating_____ Overall Composite Rating_____	**Artifact Code**_____ Serial Code: _____ 1 Rating_____ 2 Rating_____ 3 Rating_____ 4 Rating_____ Overall Composite Rating_____
Artifact Code_____ Serial Code: _____ 1 Rating_____ 2 Rating_____ 3 Rating_____ 4 Rating_____ Overall Composite Rating_____	**Artifact Code**_____ Serial Code: _____ 1 Rating_____ 2 Rating_____ 3 Rating_____ 4 Rating_____ Overall Composite Rating_____
Artifact Code_____ Serial Code: _____ 1 Rating_____ 2 Rating_____ 3 Rating_____ 4 Rating_____ Overall Composite Rating_____	**Artifact Code**_____ Serial Code: _____ 1 Rating_____ 2 Rating_____ 3 Rating_____ 4 Rating_____ Overall Composite Rating_____

Appendix G

CCSSE Crosswalk to Core Objectives

Core Objective	CCSSE Survey Question
Critical Thinking	Question 4: In your experiences at this college during the current school year, about how often have you done each of the following? (Very Often, Often, Sometimes, Never) • 4d-Worked on a paper or project that required integrating ideas or information from various sources. Question 5: During the current school year, how much of your coursework at this college emphasized the following mental activities? (Very Much, Quite a Bit, Some, Very Little) • 5b-Analyzing the basic elements of an idea, experience, or theory. • 5c-Synthesizing and organizing ideas, information, or experiences in new ways. • 5d-Making judgments about the value or soundness of information, arguments, or methods. • 5e-Applying theories or concepts to practical problems or in new situations. • 5f-Using information you have read or heard to perform a new skill. Question 12: How much has your experience at this college contributed to your knowledge, skills, and personal development in the following areas? (Very Much, Quite a Bit, Some, Very Little) • 12e-Thinking critically and analytically. • 12i-Learning effectively on your own.
Communication	Question 4: In your experiences at this college during the current school year, about how often have you done each of the following? (Very Often, Often, Sometimes, Never) • 4b-Made a class presentation • 4c-Prepared two or more drafts of a paper or assignment before turning it in. • 4d-Worked on a paper or project that required integrating ideas or information from various sources. Question 6: During the current school year, about how much reading and writing have you done at this college? • 6c-Number of written papers or reports of any length Question 12: How much has your experience at this college contributed to your knowledge, skills, and personal development in the following areas? (Very Much, Quite a Bit, Some, Very Little) • 12c-Writing clearly and effectively. • 12d-Speaking clearly and effectively.
Empirical and Quantitative	Question 12: How much has your experience at this college contributed to your knowledge, skills, and personal development in the following areas? (Very Much, Quite a Bit, Some, Very Little)

	• 12f-Solving numerical problems.
Teamwork	Question 4: In your experiences at this college during the current school year, about how often have you done each of the following? (Very Often, Often, Sometimes, Never) • 4f-Worked with other students on projects during class. • 4g-Worked with classmates outside of class. • 4h-Tutored or taught other students (paid or voluntary) Question 10: About how many hours do you spend in a typical 7-day week doing each of the following? • 10c-Participating in college-sponsored activities (organizations, campus publications, student government, intercollegiate or intramural sports, etc.) Question 12: How much has your experience at this college contributed to your knowledge, skills, and personal development in the following areas? (Very Much, Quite a Bit, Some, Very Little) • 12h-Working effectively with others.
Social Responsibility	Question 4: In your experiences at this college during the current school year, about how often have you done each of the following? (Very Often, Often, Sometimes, Never) • 4i-Participated in a community-based project as part of a regular course. • 4s-Had serious conversations with students of a different race or ethnicity other than your own. Question 9: How much does this college emphasize each of the following? (Very Much, Quite a Bit, Some, or Very Little) • 9c-Encouraging contact among students from different economic, social, and racial or ethnic backgrounds. Question 12: How much has your experience at this college contributed to your knowledge, skills, and personal development in the following areas? (Very Much, Quite a Bit, Some, Very Little) • 12k-Understanding people of other racial or ethnic backgrounds. • 12m-Contributing to the welfare of your community.
Personal Responsibility	Question 4: In your experiences at this college during the current school year, about how often have you done each of the following? (Very Often, Often, Sometimes, Never) • 4t-Had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values. Question 12: How much has your experience at this college contributed to your knowledge, skills, and personal development in the following areas? (Very Much, Quite a Bit, Some, Very Little) • 12j-Understanding yourself. • 12l-Developing a personal code of values and ethics.

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Appendix H

Graduation Survey 2015: Questions Aligned to Core Objectives

Please rate on a rating scale from 1 (Strongly disagree) through 5 (Strongly agree) based on your PAC educational experience.

1.	My educational experience at Palo Alto College helped develop my ability to integrate relevant resource materials to make sound arguments. (Critical Thinking)
2.	I feel confident interpreting quantitative information (i.e. graphs, tables, and charts). (Quantitative)
3.	My educational experience at Palo Alto College helped develop my ability to explore and investigate scientific problems. (Empirical)
4.	My educational experience at Palo Alto College helped develop my ability to communicate. (Communication)
5.	My educational experience at Palo Alto College helped develop my ability to work well with others. (Teamwork)
6.	My educational experience at Palo Alto College helped develop my ability to analyze a social issue from more than one cultural perspective. (Social Responsibility)
7.	My educational experience at Palo Alto College helped develop my ability to examine an issue from an ethical perspective other than my own. (Personal Responsibility)