

Appendix 4 - Core Competencies Team Reports

4.1 - CCT Report on Written and Oral Communications Assessments

REPORT ON ORAL COMMUNICATION ASSESSMENT FALL 2014

The Core Competencies Team (CCT) was formed in order to meet the WASC requirement that we assess the core competencies (Written Communication, Oral Communication, Critical Thinking, Quantitative Reasoning, Information Literacy) of senior students at the institutional-level. The CCT members are Sharon Hamill, Yvonne Meulemans, Joanne Pedersen, Catherine Cucinella, Terri Metzger, Jessica Mayock and Melissa Simnitt.

The assessments are discipline-neutral and focus on University-level student learning outcomes rather than program or college-level interests. The Oral Communication Assessment Project was designed to capture students' levels of oral communication competency at the culmination of their undergraduate education. Because our campus does not have exit exams or a formal all-campus oral communication requirement, we relied on volunteer faculty participants to collect our sample. It is important to note that assessment efforts, like this one, are not considered research on the process of learning, rather they are intended to measure to what degree a learning outcome is met. Methodologies, sampling approaches and data analysis are determined in the context of campus culture and available resources for the assessment project.

The assessment of oral communication took place during the Fall 2014 semester. Eleven faculty members scored 241 in-class student presentations.

ASSESSMENT PROJECT

INSTRUMENT: The CCT, in collaboration with faculty on campus, developed a scoring rubric to assess oral communication of senior students across colleges and disciplines. The rubric was created based on the then-current draft of CSUSM Undergraduate Learning Outcome (draft):

Graduates of CSUSM will communicate with confidence and skill. They will be able to clearly and effectively communicate orally in ways that are responsive to context.

During Fall 2014, the Academic Senate approved the final Undergraduate Learning Outcomes and the ULO related to oral communication is now: "Students graduate with a Bachelor's degree from CSU San Marcos will...4a. Communicate clearly and effectively in both written and oral forms."

The rubric contains five criteria of oral communication competency based on the VALUE rubric from the Association of American Colleges and Universities and was refined by a cross-disciplinary

team of CSUSM faculty. The criteria of competency are organization, language, delivery, presentation aids and purpose

FACULTY PARTICIPANTS: During the fall 2014 semester, the University Assessment Council recruited faculty participants who taught courses with an oral communication assignment and populated by senior students. Faculty participants used the rubric to assess 5 criteria of competency (organization, language, delivery, presentation aids and purpose). Faculty from three of four colleges participated.

PROCESS: Prior to the assessment, Core Competency team members met with faculty participants to provide an overview of the project and the rating instrument. Faculty participants had the choice to use either paper or electronic format of the rubric to record student scores. The electronic rubric was maintained on SurveyGizmo by the Office of Institutional Planning and Analysis. Paper rubrics were returned to the oral communication assessment project lead, Terri Metzger, via campus mail. All assessment data (electronic and paper) were combined into a single data file for analysis.

THE RESULTS

Of the 5 criteria, students were strongest in terms of language and presentation aids; they were weakest in delivery.

The percentage of students who were effective (scored 3 or higher) on all 5 criteria: $143/241 = 59.4\%$. The percentage of students who were effective (scored 3 or higher) on 4 criteria (presentation aids were omitted because there were 16 cases that did not score presentation aids): $160/241 = 66.4\%$

If we use only 4 criteria (omitting presentation aids), the data show that although 78% to 88% of graduates meet the minimum standard ("effective") for oral communication on *any one criterion*, only 2/3 of our graduating seniors (66.4%) meet the minimum standard on *all four* criteria.

*Results were not presented separately for GE or Senior major courses because we only obtained a small sample of presentations (n=21) from a single GE course. Results from t-tests indicated that GE and Senior Discipline oral presentations did not differ significantly on any of the 5 criteria so the data were combined.

Total sample: 241 oral presentations (from 3 of the 4 colleges; 91.2% in-person)

Criterion	Mean (SD)	% of sample obtaining a 3 (effective) or higher on the criterion
Organization	3.27 (.72)	85.4%
Language	3.17 (.66)	88.0%

Delivery	3.00 (.76)	77.9%
Presentation Aids	3.26 (.70)	87.1%
Purpose	3.23 (.71)	85.9%

Total Sample: n =241 (valid percent – missing data not included)

	Highly Effective	Effective	Marginally Effective	Ineffective
Organization	42.4%	42.9%	13.8%	0.8%
Language	30.3%	57.7%	10.8%	1.2%
Delivery	25.8%	52.1%	18.8%	3.3%
Presentation Aids	40.0%	47.1%	12.0%	0.9%
Purpose	38.2%	47.7%	12.9%	1.2%

RECOMMENDATIONS

We offer the following recommendations to the University Assessment Council regarding the Report on Assessment of Oral Communication:

Disseminating the results of this assessment begins the process of taking action and moving beyond circulating the reports. We urge the UAC to disseminate the results widely to the following individuals and units across campus:

- Dean of Undergraduate Studies
- The Associate Deans of the Colleges (to share report at meeting with their Deans/and Department Chairs)
- Faculty Center Director
- Faculty Center Teaching and Learning Fellows
- Executive Committee of the Academic Senate for discussion
- Academic Senate as an information item
- Institutional Analysis and Research (this data can be linked to existing data on oral communication)

Additional recommendations include:

- Faculty (TT and lecturer faculty) and administrators can discuss the assessment results.
Possible discussion prompts include:
 - What do you do in your own program to support oral communication?
 - Where is oral communication curriculum integrated into the students' educational experience?
 - Are we OK with only 66% of our graduating students achieving the minimum standard in Oral Communication across all 4 criteria? Do we see this as an area we need to address?
- CSUSM does not have a formal "speaking across the curriculum" requirement, or provide academic support for oral communication beyond the lower division GE required course, so these may be potential starting points.

Oral Communication rubric attached.

Report on Written Communication Assessment WASC Spring 2014

The assessment of written communication took place May 30th, 2014. Catherine Cucinella, Literature and Writing Studies and Director of General Education Writing (GEW) and seven General Education Writing (GEW) faculty, Jayne Braman, Erica Duran, Grace Kessler, Dale Metcalfe, Curry Mitchell, Pegah Motaleb, and Lauren Springer read and assessed 40 Senior General Education and 83 Senior/Major essays.

The rubric used to score these essays was created based on the following Institutional Learning Outcome (draft):

Students will clearly, confidently, and effectively communicate in written form, demonstrating both an awareness of and attentiveness to diverse audiences.

Preparation for the session:

Cucinella and Mitchell selected six essays from GE and Senior essays which they read and scored independently using the rubric, created Fall 2013 by a group of faculty different from those participating in the May 30th assessment. Cucinella and Mitchell met and normed the essays.

In that planning session, Cucinella and Mitchell determined that most papers would probably need third reads because the rubric is analytic rather than holistic (see page 4). We also realized that we would have to use hard copies of the rubric and that the final reader would enter the scores electronically. Although more than one person could read and score each essay on Turnitin, each scorer would override the previous score on the rubric, thus the need for the paper rubric.

The Assessment

The norming session took an hour and half.

- All the papers were read twice.
 - Of the 40 GE papers, 36 were read three times.
 - Of the 83 Senior essays, 74 were read three times.
 - One GE essay was not read because it was clearly plagiarized.

Based on the norming and the rubric, the group determined that a passing essay should score a “2/Adequate,” on a 4-point scale, in the following three categories—“Purpose,” “Organization,” and “Audience/Voice”—deeming these categories critical to students’ demonstrating their understanding and mastery of the writing process.

However, the final results indicate that considering all four categories, rather than three, for determining a passing paper is not statistically significant:

- Percentage of students who passed with a 2 on Purpose, Organization and Audience/Voice: 93.4%
- Percentage of students who passed with a 2 on all 4 criteria: 92.6%

The data provide interesting patterns of strengths. You will see papers with “excellent” purpose, but “strong” organization because the writer falters a bit in developing the purpose. You will see papers strong in both “purpose” and “organization” but “adequate” in “mechanics” and “audience/voice.”

Recommendations

Assessment matters *if* we make it matter—if we disseminate *and* discuss the results in order to figure out what we are doing well and what we can do better, as we use the data to improve our programs. One of the Core Competencies Team’s goals is to initiate these critical steps in the assessment process. In order to do so, we offer the following recommendations to the University Assessment Council regarding the Report on Assessment of Written Communication.

We urge the UAC to share the results with the following individuals and units across campus:

- Dawn Formo, Dean of Undergraduate Studies
- The Associate Deans of the Colleges (share report at meeting with their Deans/and Department Chairs):
 - Mohammad Oskooruschi, Associate Dean, CoBA
 - Denise Garcia, Associate Dean, CEHHS
 - Scott Greenwood, Associate Dean, CHABSS
 - Rick Fierro, Associate Dean, CSM
- Elisa Grant-Vallone, Faculty Center Director
- Faculty Center Teaching and Learning Fellows:
 - Veronica Anover, Faculty Fellow for Teaching & Learning for the 21st Century Student
 - Matthew Atherton, Faculty Fellow for Teaching & Learning for the 21st Century Student
- The faculty who provided student samples for the assessment
- Executive Committee of the Academic Senate for discussion
- Academic Senate as an information item
- Institutional Analysis and Research (this data can be linked to existing data on writing)

Closing the Loop

Disseminating the results of this assessment begins the process of “closing the loop,” which means taking action, moving beyond circulating the reports. The conversations about what the data reveal can result in productive exchanges among faculty, and the data can help faculty identify areas where institutional support is needed to further enhance teaching and learning. Therefore, the CCT team urges the UAC to share the report within this context of “taking action” and to add to the list of recommendations.

- Departments could evaluate the results and examine how they support writing in their majors.
- Departments could compare any of their existing data on their majors’ writing abilities to the institutional level data (i.e. National Survey of Student Engagement[NSSE]).
- Plagiarism was an issue raised in the assessment; departments could revisit their policies on plagiarism and consider how they handle writing assignments and plagiarism.

- Should departments invite the Dean of Student's office to communicate more directly to students and faculty about plagiarism and academic honesty?
- Both TT and Lecturer faculty should be involved in discussions about assessment results.
- GEW instructors can discuss the data at the spring 2015 retreat.

Results Written Communication Spring 2014

Total sample: 122 papers

Criterion	Mean (SD)	% of sample obtaining a 2 or higher on the criterion
Purpose	3.05 (.80)	98.4%
Organization	2.72 (.79)	95.1%
Mechanics	2.61 (.76)	96.7%
Audience/Voice	2.93 (.78)	98.4%

Percentage of students who passed with a 2 on Purpose, Organization and Audience/Voice:
93.4%

Percentage of students who passed with a 2 on all 4 criteria: 92.6%

GE sample: 39 papers

Criterion	Mean (SD)	% of sample obtaining a 2 or higher on the criterion
Purpose	3.15 (.88)	94.9%
Organization	2.79 (.83)	94.9%
Mechanics	2.67 (.93)	92.3%
Audience/Voice	3.13 (.80)	97.4%

Percentage of students who passed with a 2 on Purpose, Organization and Audience/Voice:
92.3%

Percentage of students who passed with a 2 on all 4 criteria: 89.8%

Senior Discipline Courses sample: 83 papers

Criterion	Mean (SD)	% of sample obtaining a 2 or higher on the criterion
Purpose	3.00 (.77)	100%
Organization	2.70 (.76)	95.2%
Mechanics	2.59 (.66)	98.8%
Audience/Voice	2.83 (.76)	98.8%

Percentage of students who passed with a 2 on Purpose, Organization and Audience/Voice:
93.9%

Percentage of students who passed with a 2 on all 4 criteria: 93.9%

Summary: No matter how we looked at it, students demonstrated the greatest strengths for purpose and audience/voice. They had the most trouble with organization and mechanics. Overall, the majority of students met the minimum standard for each criterion.

One GE student plagiarized: 2.5% of the GE sample, 0.8% of the total sample.

(Sharon Hamill)

Scoring Rubric Spring 2014

	4 Excellent	3 Strong	2 Adequate	1 Needs Improvement
Purpose measures clarity: demonstrated in a well-defined/distinct controlling idea (thesis, dominant impression), in consistent/logical connections among ideas, and in the control of excess (language/material)	Establishes clear purpose and conceptual coherence, which effectively conveys meaning and promotes ease of understanding.	Demonstrates purpose and conceptual coherence, but contains some tangential content or redundant language, which while conveying meaning, can affect ease of understanding.	Generally shows purpose and conceptual coherence, but contains redundant language or irrelevant content, which does convey meaning but at times interferes with ease of understanding.	Lacks a clear purpose and conceptual coherence and contains redundant language and irrelevant material, all of which obscures meaning and inhibits the readability of the paper.
Organization measures the unity of ideas: logical structures (within and between paragraphs), a progression of ideas and objective (thesis, controlling idea, purpose of the assignment)	All aspects of the writing are unified and coherently advance the objective (thesis, controlling idea, purpose) of the assignment.	Demonstrates a well- organized discussion in which most paragraphs are focused and purposeful, and progress logically in order to advance the objective (thesis, controlling idea, purpose) of the assignment.	Generally clear logical progression within and/or between points to advance the objective (thesis, controlling idea, purpose) of the assignment. Some paragraphs may be out of order or contain too many ideas.	Lacks clear organization, containing many unfocused paragraphs. Does not provide connections among paragraphs, to the main points or to the objective (thesis, controlling idea, purpose) of the assignment.
Mechanics measures an attention to the minutia of format, sentence boundaries, and editing	The mechanics and usage demonstrate a mature understanding of the details of written prose and style, with few errors. Follows documentation and format rules appropriate to assignment and discipline.	Well-polished and proficient grammar and usage, with few errors. Generally follows documentation and format rules appropriate to assignment and discipline.	Occasional major or frequent minor errors in grammar, usage, and mechanics. Inconsistent attention to documentation and format rules appropriate to assignment and discipline.	Accumulation of errors in grammar, usage and mechanics that frequently or severely interferes with meaning. Does not follow or may disregard documentation and format rules appropriate to assignment and discipline.
Audience/Voice measures an awareness of a target audience and its needs, in addition to the clarity, precision, and appropriateness of a convention style/voice	All aspects of the writing capture, manage, and compel the interest of a target audience, through word choice and syntax, featuring a fluency of language.	Most aspects of the writing meet the expectations of a target audience. Word choice and syntax demonstrate a control of diction that effectively communicate the ideas.	Generally meets the expectations of a target audience. Word choice and syntax generally communicate the ideas, but sometimes may be inappropriate, thus interfering with effective communication.	Does not demonstrate awareness or consideration for target audience. Word choice and syntax are questionable or consistently unclear. Does not convey ideas.

Parts of this rubric adapted from revised GEW rubric (2014)

The Core Competencies Team (CCT) was formed in order to meet the WASC requirement that we assess the core competencies (Written Communication, Oral Communication, Critical Thinking, Quantitative Reasoning, Information Literacy) of senior students at the institutional-level. The CCT members are Sharon Hamill, Yvonne Meulemans, Joanne Pedersen, Catherine Cucinella, Terri Metzger, Jessica Mayock and Melissa Simnitt.

The assessments are discipline-neutral and focus on University-level student learning outcomes rather than program or college-level interests. The critical thinking and information literacy rubric was designed to assess students' ability to use information ethically, identify issues, analyze information and arguments, and come to conclusions using inductive and deductive strategies. The assessment was designed to test these skills across the curriculum, with samples from both general education courses and senior-level majors courses.

It is important to note that assessment efforts, like this one, are not considered research on the process of learning, rather they are intended to measure to what degree a learning outcome is met. Methodologies, sampling approaches and data analysis are determined in the context of campus culture and available resources for the assessment project.

The assessment of Critical Thinking/Information Literacy took place during the Spring 2015 semester. Six faculty members from six different courses scored 109 assignments (99 written, 10 oral). One course was from the general education program (n = 28).

ASSESSMENT PROJECT

INSTRUMENT: During Fall 2014, the CCT members discussed how to approach assessing information literacy and critical thinking. The group wondered if there was sufficient overlap in the concepts of information literacy and critical thinking that would facilitate assessing both simultaneously. Jessica Mayock (Philosophy) and Yvonne Meulemans (Library Faculty) took the lead on reviewing existing rubrics of these concepts in hopes of determining if a single rubric could be created. The VALUE Rubrics for Information Literacy and Critical Thinking as well as rubrics from other universities were consulted. An initial draft was created and then edited by the library faculty from the Library's Information Literacy Program, a group of Philosophy faculty, and members of the CCT. After several iterations, a final draft of rubric (Appendix A, or however we attached the rubric in these reports) was created.

The rubric was also considered alongside the CSUSM's Undergraduate Learning Outcomes (ULO'S). During Fall 2014, the Academic Senate approved the final ULO's. Critical thinking and information literacy are articulated in Learning Outcomes 2:

2) Comprehensive and critical thinkers. Students will be able to:

1. Identify key concepts and develop a foundation for future inquiry
2. Analyze complex problems and develop solutions by applying quantitative and qualitative reasoning, integrating knowledge and skills from a variety of disciplines
3. Construct well-reasoned arguments based on evidence

In addition, the Philosophy faculty that reviewed and edited the rubric made changes to ensure that the rubric reflects the specific GE learning outcomes for Area A3 (Critical Thinking).

FACULTY PARTICIPANTS: During the spring 2015 semester, a random sample of General Education and senior-level majors courses was obtained. The University Assessment Council was given a list of specific sections of courses that were selected and asked to recruit faculty participants who taught these courses for the project. Nine faculty, from all Colleges, were initially approached. Some faculty declined to participate. Those faculty that agreed to participate then had a face-to-face or phone meeting with a member of the CCT. When a faculty member declined to participate, CCT asked the UAC to identify other faculty within a college that might do so. Those that agreed then had a face-to-face meeting with a CCT member. Participants used the rubric to assess 4 criteria as described in the rubric. Faculty from all four colleges participated.

PROCESS: Prior to the assessment, Core Competency team members met with faculty participants to provide an overview of the project and the rating instrument. Faculty participants had the choice to use either paper or electronic format of the rubric to record student scores. The electronic rubric was maintained on SurveyGizmo by the Office of Institutional Planning and Analysis. All participants used the electronic rubric. All assessment data (electronic and paper) were combined into a single data file for analysis.

THE RESULTS

Students who Meet Threshold as Seniors

Of the 4 criteria, students were strongest in terms of ethical use of information and explanation of issues; they were weakest in analyzing and synthesizing information. This was true for the overall sample as well as each sub-group (GE versus Majors courses).

The percentage of students who were effective (scored 3 or higher) on all 4 criteria: $68/109 = 62.4\%$. The percentage of students who were effective (scored 3 or higher) on 3 criteria (ethical use of information was omitted because there were 22 cases that did not receive scores on this criterion): $71/109 = 65.1\%$

When examining the data for all students in the assessment, results show that although 72.5% to 94.2% of graduates meet the minimum standard (“effective”) for CT/IL on *any one criterion*, less than 2/3 of our graduating seniors (62.4%) meet the minimum standard on *all four* criteria.

GE versus Majors: Student Performance

Results are presented separately for the GE (n = 28) and Senior major courses (n = 81). Results of t-tests indicated that on every criterion, students in the GE course scored significantly higher than students in majors courses. Caution should be used in interpreting this finding as there was only one GE course represented in the sample; thus, the findings could reflect either real differences, biases on the part of the professors, or different standards imposed for demonstrating CT/IL in GE and majors courses. Inspection of the standard deviations indicates that there was considerable variation on the reasoning/planning and outcomes criteria for the faculty evaluating student work in majors courses. This may suggest that the faculty need to discuss exactly what these outcomes may mean.

Total sample: 109 assignments (rated on a 4-point scale)

Criterion	GE Mean (SD)	Majors Mean (SD)	Overall Mean (SD)	% of total sample obtaining a 3 (meets standard) or higher on the criterion
Explanation of Issues (identify/evaluate)*+	3.86 (.36)	3.21 (.79)	3.38 (.76)	85.2%
Reasoning/Planning (analyze)*+	3.54 (.51)	2.91 (1.02)	3.07 (.95)	77.0%
Outcome (synthesize)*+	3.79 (.42)	2.80 (1.1)	3.06 (1.06)	72.5%
Ethical Use of Information*+	3.93 (.26)	3.54 (.65)	3.67 (.58)	94.2%

*Statistically significant difference

+N = 81 (the criterion was not relevant for the assignment in one course)

Total Sample: n =109 (valid percent – missing data not included)

	Above Standard (GE Majors)	Meets Standard	Approaching Standard	Emerging
Explanation of Issues (identify/evaluate)	53.7	31.5	13.9	.9
• GE	<i>85.7</i>	<i>14.3</i>		
• Majors	<i>42.5</i>	<i>37.5</i>	<i>18.8</i>	<i>1.3</i>
Reasoning/Planning (analyze)	39.4	37.6	13.8	9.2
• GE	<i>46.4</i>	<i>53.6</i>		
• Majors	<i>34.6</i>	<i>34.6</i>	<i>18.5</i>	<i>12.3</i>
Outcome (synthesize)	45.9	26.6	14.7	12.8
• GE	<i>78.6</i>	<i>21.4</i>		
• Majors	<i>34.6</i>	<i>28.4</i>	<i>19.8</i>	<i>17.3</i>
Ethical Use of Information ⁺	72.4	21.8	5.7	0
• GE	<i>92.9</i>	<i>7.1</i>		
• Majors	<i>62.7</i>	<i>28.8</i>	<i>8.5</i>	

⁺N = 81 (the criterion was not relevant for the assignment in one course)

RECOMMENDATIONS

We offer the following recommendations to the University Assessment Council regarding the Report on Assessment of Critical Thinking/Information Literacy:

Disseminating the results of this assessment begins the process of taking action and moving beyond circulating the reports. We urge the UAC to disseminate the results widely to the following individuals and units across campus:

- Dean of Undergraduate Studies
- The Associate Deans of the Colleges (to share report at meeting with their Deans/and Department Chairs)
- Faculty Center Director
- Faculty Center Teaching and Learning Fellows
- Executive Committee of the Academic Senate for discussion
- Academic Senate as an information item
- Institutional Analysis and Research (this data can be linked to existing data on oral communication)

Additional recommendations include:

- Faculty (TT and lecturer faculty) and administrators can discuss the assessment results. Possible discussion prompts include:
 - How do you define “critical thinking” in your discipline? What evidence do you use to determine whether students exhibit CT?
 - How do you define “information literacy” in your discipline? What evidence do you use to determine whether students exhibit IL?
 - Does your curriculum support the development of CT and IL as students move through their undergraduate years?

The lower scores in analysis and synthesis indicate that while students are skilled at identifying issues and collecting information, as well as using information ethically, they are less adept at synthesizing that information to come to conclusions. Since the skills of analysis and synthesis are relevant to all disciplines across the curriculum, departments might discuss how their assignments support learning and practicing these skills. Analysis and synthesis are more sophisticated processes than identifying issues and evaluating sources, and students may not have had much experience in these skills prior to their college coursework.

If analysis/synthesis skill are indeed more complex, students may not have learned these skills before college—particularly due to the emphasis on standardized testing, etc. Perhaps undergraduate students have been trained to “get the right answer” and are very unsure of themselves when asked to construct an argument using evidence and logic. Maybe one way to use the assessment results is to look at the curriculum, especially assignments, within each discipline

and identify method and assignments that can foster that help to foster these more sophisticated levels of CTIL.

- What kinds of opportunities do students have to analyze and synthesize information?

Critical Thinking/Information Literacy rubric attached.

4.2 - Assessment-Related Changes to Course (Biology 210)

Summary of specific changes to the BIOL 210 laboratory related to Q+C grant

1. Increased emphasis on the use of Microsoft Excel for graphing and calculations:

- a. Six (of ten) lab exercises now involve the creation of scatterplot graphs using Excel (generally in the context of making and using standard curves). Note that graphs are also created by hand (with graph paper) in early exercises in order to solidify basic concepts of graphing data. *Previously, similar graphing exercises were performed in a maximum four lab exercises, and graphs were generally drawn by hand.*
- b. Three lab exercises involve the creation of line or column graphs. The differences between line/column graphs and scatter plots (with the concepts of continuous and discrete variables) are explicitly addressed. *Previously, only one column graph was assembled, and the concept of continuous and discrete variables in relation to graphing data was not discussed.*
- c. Students are introduced to basic calculations in Excel, including simple equations (related to standard curves), logarithms, and exponents. *These are new topics that were not previously discussed in the course.*
- d. Using Excel, students compare linear trendlines and exponential trendlines in describing datasets. R-squared values are used to assess which type of trendline provides the most appropriate model of the data. *These are new topics that were not previously discussed in the course.*

2. A new appendix (I) has been added to the lab manual.

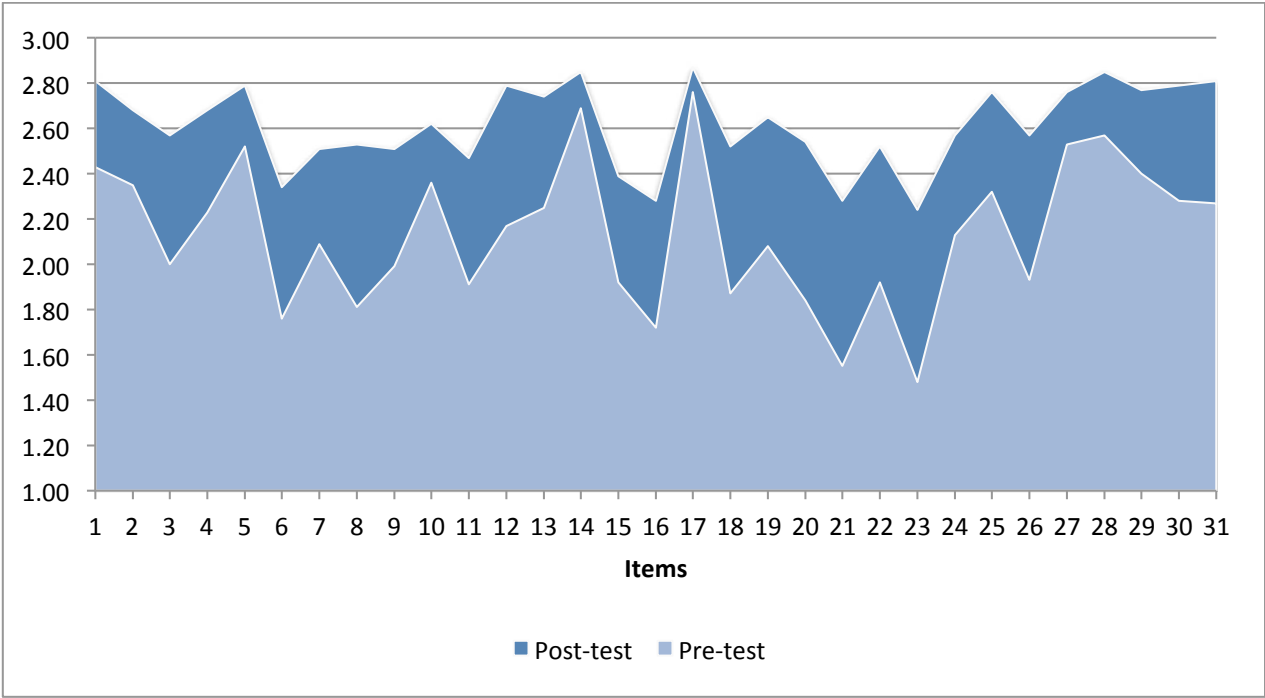
Appendix I reviews Scientific Notation, the Metric System, Logarithms and Exponents, and Significant Figures. All of these topics should have been introduced in previous courses (esp. precalculus and CHEM 150), but key points are reviewed/reinforced here. Practice problems are included, and students will take an assessment quiz on these topics in the second week of lab. All students must achieve at least an 80% on this quiz prior to continuing in the course. (Note that the quiz may be taken multiple times). Questions on lab exams will also reflect increased focus on these quantitative topics. *Previously, scientific notation and the metric system were covered briefly, while logarithms and significant figures were not explicitly addressed.*

3. A new appendix (II) has been added to the lab manual.

Appendix II reviews concepts related to dilutions. Practice problems are included. Questions on lab exams will reflect increased focus on dilutions. *Previously, calculations related to dilutions were covered in a more cursory manner.*

4.3 - Student Knowledge Survey (Biology 210)

Student knowledge survey of quantitative and computational concepts- BIOL 210



4.4 - The Freshman Survey vs. College Senior Survey by Year

**Changes in Respondents' Activities: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
Number of respondents who took both surveys:	N=45			N=94			N=165		
<i>During the past year, spent more than 5 hours/week:</i>									
Studying/ Doing homework	20.7%	60.3%	39.6%	33.7%	67.3%	33.6%	35.6%	65.8%	30.2%
Online social networks	-	-	-	10.0%	30.0%	20.0%	23.1%	23.2%	0.1%
Watching TV	27.5%	34.4%	6.9%	21.0%	30.3%	9.3%	24.5%	25.9%	1.4%
Student clubs/groups	5.3%	10.7%	5.4%	7.2%	15.4%	8.2%	14.2%	15.7%	1.5%
Partying	27.5%	20.6%	-6.9%	16.3%	15.2%	-1.1%	20.7%	14.0%	-6.0%
Housework/childcare	6.8%	12.1%	5.3%	11.7%	9.3%	-2.4%	13.6%	15.6%	2.0%
Socializing with friends	67.2%	53.4%	-13.8%	69.8%	59.3%	-10.5%	71.9%	48.7%	-23.2%
Exercising or participating in sports	50.0%	29.3%	-20.7%	48.2%	35.4%	-12.8%	47.9%	34.5%	-13.4%
<i>Since entering college, respondent has Frequently:</i>									
Studied with other students	25.8%	27.4%	1.6%	32.6%	50.0%	17.4%	34.0%	44.0%	10.0%
Used the Internet for research or homework	88.7%	95.2%	6.5%	88.2%	95.7%	7.5%	-	-	-
Revised papers to improve writing ability	-	-	-	56.3%	56.3%	0.0%	-	-	-
<i>Since entering college, respondent has Frequently/ Occasionally:</i>									
Performed community service as part of a class	53.3%	72.6%	19.3%	55.5%	76.1%	20.6%	53.2%	74.7%	21.5%
Asked a professor for advice after class	82.2%	90.3%	8.1%	84.7%	93.4%	8.7%	84.2%	91.8%	7.6%
Come late to class	54.9%	50.0%	-4.9%	64.1%	70.7%	6.6%	58.3%	65.8%	7.5%
Worked on a local, state, or national political campaign	3.8%	7.5%	3.7%	6.7%	11.1%	4.4%	-	-	-
Have been a guest in a professor's home	-	-	-	17.4%	16.3%	-1.1%	13.9%	10.1%	-3.8%
Been bored in class	96.8%	96.8%	0.0%	96.7%	94.6%	-2.1%	95.0%	96.2%	1.2%
Participated in volunteer or community service work	-	-	-	81.7%	76.4%	-5.3%	80.8%	78.5%	-2.3%
Tutored another student	59.0%	55.7%	-3.3%	57.0%	50.5%	-6.5%	53.5%	42.8%	-10.7%
Voted in a student election	62.3%	55.8%	-6.5%	67.4%	57.7%	-9.7%	67.3%	56.6%	-10.7%
Discussed politics	-	-	-	86.1%	74.7%	-11.4%	78.5%	66.9%	-11.6%

**Changes in Respondents' Self Ratings: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
<i>Areas respondents rate themselves as Highest 10% / Above Average compared to their peers:</i>									
Writing ability	36.1%	60.7%	24.6%	46.7%	63.0%	16.3%	47.7%	65.9%	18.2%
Public speaking ability	31.2%	32.8%	1.6%	31.5%	47.8%	16.3%	32.6%	42.4%	9.8%
Leadership ability	55.8%	68.8%	13.0%	62.2%	76.7%	14.5%	59.8%	65.9%	6.1%
Computer skills	44.3%	49.2%	4.9%	41.3%	55.4%	14.1%	40.2%	44.3%	4.1%
Academic ability	55.8%	73.8%	18.0%	61.9%	75.0%	13.1%	62.9%	68.9%	6.0%
Self confidence (intellectual)	54.1%	54.1%	0.0%	56.5%	67.4%	10.9%	52.3%	66.2%	13.9%
Ability to see the world from someone else's perspective	-	-	-	-	-	-	66.5%	79.8%	13.3%
Tolerance of others with different beliefs	-	-	-	-	-	-	69.3%	81.6%	12.3%
Openness to having one's views challenged	-	-	-	-	-	-	57.0%	63.2%	6.2%
Artistic ability	19.7%	27.9%	8.2%	22.8%	33.7%	10.9%	21.2%	25.0%	3.8%
Self-understanding	47.5%	60.6%	13.1%	58.7%	65.2%	6.5%	56.9%	61.4%	4.5%
Drive to achieve	72.2%	77.0%	4.8%	77.0%	81.4%	4.4%	72.8%	83.4%	10.6%
Physical health	47.5%	36.0%	-11.5%	56.5%	60.8%	4.3%	42.0%	44.3%	2.3%
Understanding of others	75.4%	78.7%	3.3%	73.9%	76.1%	2.2%	70.8%	73.8%	3.0%
Cooperativeness	75.0%	73.3%	-1.7%	75.0%	77.2%	2.2%	73.3%	80.1%	6.8%
Creativity	49.2%	60.6%	11.4%	58.7%	59.8%	1.1%	47.0%	53.1%	6.1%
Mathematical ability	41.0%	32.8%	-8.2%	40.2%	41.3%	1.1%	34.8%	28.0%	-6.8%
Emotional health	52.5%	55.7%	3.2%	53.3%	53.2%	-0.1%	47.4%	51.9%	4.5%
Self confidence (social)	54.1%	44.2%	-9.9%	55.5%	51.1%	-4.4%	44.3%	53.4%	9.1%

**Changes in the Importance of Various Goals: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
<i>Respondent considers the following to be Essential / Very Important:</i>									
Developing a meaningful philosophy of life	36.2%	57.5%	21.3%	43.9%	71.9%	28.0%	45.4%	59.2%	13.8%
Becoming involved in programs to clean up the environment	16.7%	25.0%	8.3%	18.3%	43.9%	25.6%	22.4%	30.8%	8.4%
Helping to promote racial understanding	29.8%	42.5%	12.7%	28.4%	51.8%	23.4%	31.2%	49.5%	18.3%
Participating in a community action program	23.4%	34.0%	10.6%	27.2%	49.4%	22.2%	23.1%	42.6%	19.5%
Obtaining recognition from my colleagues for contributions to my special field	50.0%	58.0%	8.0%	46.3%	67.5%	21.2%	53.6%	67.8%	14.2%
Influencing social values	57.2%	47.0%	-10.2%	41.3%	60.0%	18.7%	41.8%	59.1%	17.3%
Writing original works (poems, novels, etc.)	12.8%	14.9%	2.1%	2.4%	19.6%	17.2%	16.2%	22.5%	6.3%
Helping others who are in difficulty	64.6%	62.5%	-2.1%	69.5%	86.6%	17.1%	69.1%	80.9%	11.8%
Becoming an authority in my field	51.0%	53.1%	2.1%	57.3%	70.7%	13.4%	-	-	-
Keeping up to date with political affairs	23.4%	44.7%	21.3%	37.0%	49.4%	12.4%	-	-	-
Becoming accomplished in one of the performing arts (acting, dancing, etc.)	14.0%	26.0%	12.0%	12.2%	23.2%	11.0%	-	-	-
Making a theoretical contribution to science	12.7%	19.2%	6.5%	15.0%	25.0%	10.0%	19.1%	21.8%	2.7%
Becoming a community leader	40.4%	38.3%	-2.1%	42.0%	49.4%	7.4%	27.8%	38.9%	11.1%
Becoming successful in a business of my own	38.3%	38.2%	-0.1%	41.0%	47.0%	6.0%	55.5%	50.9%	-4.6%
Creating artistic work (painting, sculpture, etc.)	14.6%	16.7%	2.1%	16.0%	20.9%	4.9%	10.2%	16.7%	6.5%
Raising a family*	82.0%	78.0%	-4.0%	82.7%	83.9%	1.2%	71.8%	71.8%	0.0%
Being very well off financially	81.6%	67.4%	-14.2%	84.1%	81.7%	-2.4%	83.6%	73.7%	-9.9%
Improving my understanding of other countries & cultures	-	-	-	76.5%	61.7%	-14.8%	48.1%	64.9%	16.8%

*8% increase in Senior respondents who considered raising a family "Essential"

**Changes in Respondents' Opinions: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
Respondent agrees "strongly" or "somewhat"									
Wealthy people should pay a larger share of taxes than they do now	56.0%	57.6%	1.6%	50.6%	73.0%	22.4%	-	-	-
Affirmative action in college admissions should be abolished	51.8%	53.6%	1.8%	51.9%	68.4%	16.5%	-	-	-
Students from disadvantaged social backgrounds should be given preferential treatment in college admissions	-	-	-	-	-	-	30.8%	27.9%	-2.9%
Same-sex couples should have the right to legal marital status	60.6%	72.1%	11.5%	66.6%	73.6%	7.0%	75.0%	92.3%	17.3%
Dissent is a critical component of the political process	41.9%	54.9%	13.0%	-	-	-	54.6%	60.8%	6.2%
Abortion should be legal	53.3%	61.6%	8.3%	-	-	-	67.6%	82.1%	14.5%
Undocumented immigrants should be denied access to public education	36.4%	42.5%	6.1%	49.4%	44.6%	-4.8%	-	-	-
A national health care plan is needed to cover everybody's medical costs	56.2%	68.8%	12.6%	72.6%	66.6%	-6.0%	-	-	-
The death penalty should be abolished	35.0%	33.3%	-1.7%	-	-	-	-	-	-
Racial discrimination is no longer a major problem in America*	27.9%	18.1%	-9.8%	-	-	-	20.5%	19.7%	-0.8%
Colleges should prohibit racist/sexist speech on campus	-	-	-	-	-	-	31.6%	77.2%	45.6%
Colleges have the right to ban extreme speakers from campus	66.6%	56.7%	-9.9%	-	-	-	75.0%	62.3%	-12.7%
Realistically, an individual can do little to bring about changes in our society	28.3%	18.3%	-10.0%	-	-	-	25.0%	26.7%	1.7%
How would you characterize your political views?									
Far Left	1.7%	3.4%	1.7%	1.2%	1.2%	0.0%	4.0%	4.0%	0.0%
Liberal	27.1%	40.7%	13.6%	24.7%	32.1%	7.4%	25.8%	27.8%	2.0%
Middle-of-the-road	45.8%	27.1%	-18.7%	46.9%	43.2%	-3.7%	51.0%	47.7%	-3.3%
Conservative	18.6%	23.7%	5.1%	27.2%	23.5%	-3.7%	19.2%	19.2%	0.0%
Far right	6.8%	5.1%	-1.7%	0.0%	0.0%	0.0%	0.0%	1.3%	1.3%

* 2013: 39% of seniors vs. 33% of freshmen "Strongly Disagree" with this statement

**Changes in Academic Activities: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
Average grades?									
A or A+	9.7%	4.8%	-4.9%	14.9%	11.7%	-3.2%	12.5%	14.2%	1.7%
A-	21.0%	14.5%	-6.5%	13.8%	11.7%	-2.1%	19.2%	20.8%	1.6%
B+	32.3%	48.4%	16.1%	26.6%	30.9%	4.3%	25.8%	25.0%	-0.8%
B	32.3%	11.3%	-21.0%	34.0%	23.4%	-10.6%	34.2%	23.3%	-10.9%
B-	3.2%	12.9%	9.7%	10.6%	14.9%	4.3%	4.2%	7.5%	3.3%
C+	1.6%	8.1%	6.5%	0.0%	7.4%	7.4%	3.3%	9.2%	5.9%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	-0.8%
Highest Degree planned:									
Bachelor's (B.A., B.S., etc.)	33.3%	18.2%	-15.1%	27.5%	18.8%	-8.7%	35.3%	9.8%	-25.5%
Master's (M.A., M.S., etc.)	48.5%	60.6%	12.1%	50.0%	58.8%	8.8%	38.2%	43.1%	4.9%
Ph.D. or Ed.D.	15.2%	6.1%	-9.1%	13.8%	12.5%	-1.3%	19.6%	30.4%	10.8%
Other	3.0%	15.1%	12.1%	8.8%	8.8%	0.0%	6.9%	11.7%	4.8%
Major									
Biological Science	6.7%	0.0%	-6.7%	3.5%	7.1%	3.6%	11.6%	7.5%	-4.1%
Business	15.6%	22.2%	6.6%	25.9%	21.2%	-4.7%	19.9%	10.3%	-9.6%
Education	22.2%	15.6%	-6.6%	8.2%	4.7%	-3.5%	12.3%	6.8%	-5.5%
Engineering	0.0%	0.0%	0.0%	1.2%	0.0%	-1.2%	0.0%	0.0%	0.0%
English	0.0%	4.4%	4.4%	1.2%	5.9%	4.7%	2.1%	2.1%	0.0%
Health Professional	4.4%	2.2%	-2.2%	15.3%	4.7%	-10.6%	15.1%	4.8%	-10.3%
History or Political Science	2.2%	4.4%	2.2%	7.1%	7.1%	0.0%	2.7%	6.2%	3.5%
Humanities	0.0%	8.9%	8.9%	1.2%	8.2%	7.0%	2.1%	7.5%	5.4%
Fine Arts	0.0%	0.0%	0.0%	1.2%	0.0%	-1.2%	0.0%	2.1%	2.1%
Mathematics or Statistics	2.2%	4.4%	2.2%	2.4%	1.2%	-1.2%	0.7%	0.0%	-0.7%
Physical Science	0.0%	0.0%	0.0%	3.5%	0.0%	-3.5%	1.4%	0.0%	-1.4%
Social Science	15.6%	22.2%	6.6%	7.1%	14.1%	7.0%	13.7%	31.5%	17.8%
Computer Science	4.4%	2.2%	-2.2%	2.4%	3.5%	1.1%	0.7%	0.7%	0.0%
Other Non-technical*	13.3%	13.3%	0.0%	10.6%	22.4%	11.8%	13.0%	20.5%	7.5%
Undecided	13.3%	0.0%	-13.3%	9.4%	0.0%	-9.4%	4.8%	0.0%	-4.8%

*Includes Communication, Kinesiology & Other Field

**Changes in Health & Wellness: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
<i>During the past year, respondent has Frequently / Occasionally:</i>									
Drank beer	29.1%	58.1%	29.0%	30.8%	75.8%	45.0%	31.6%	62.4%	30.8%
Drank wine or liquor	39.3%	72.2%	32.9%	43.3%	84.5%	41.2%	36.1%	85.7%	49.6%
Felt depressed	-	-	-	55.9%	56.0%	0.1%	57.0%	63.7%	6.7%
Smoked cigarettes	16.4%	13.1%	-3.3%	14.2%	13.0%	-1.2%	11.9%	14.1%	2.2%
Felt overwhelmed by all I had to do	95.1%	91.9%	-3.2%	94.7%	91.4%	-3.3%	92.6%	97.0%	4.4%

**Changes in Religiosity/Spirituality: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

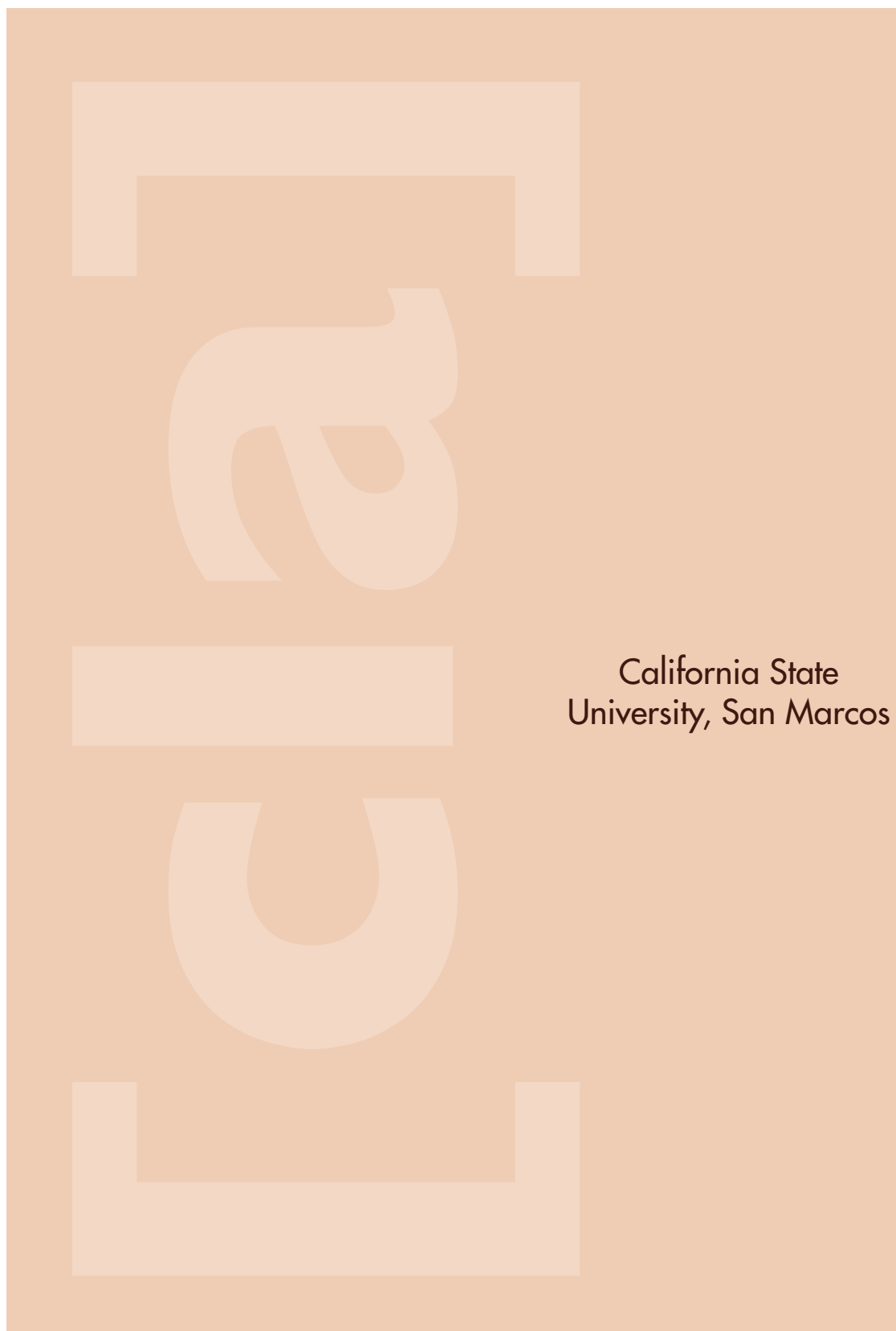
	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
<i>During the past year, respondent Frequently/Occasionally:</i>									
Discussed religion	88.8%	71.2%	-17.6%	85.0%	81.7%	-3.3%	83.1%	66.7%	-16.4%
Attended a religious service	79.1%	59.7%	-19.4%	75.3%	59.2%	-16.1%	71.8%	48.9%	-22.9%
Change in current religious preference									
Methodist	5.1%	5.1%	0.0%	1.3%	0.0%	-1.3%	0.9%	0.9%	0.0%
Presbyterian	3.4%	1.7%	-1.7%	3.8%	2.6%	-1.2%	3.4%	3.4%	0.0%
Roman Catholic	37.3%	28.8%	-8.5%	41.0%	35.9%	-5.1%	33.6%	31.9%	-1.7%
Other Christian	20.3%	18.6%	-1.7%	19.2%	16.7%	-2.5%	28.4%	14.7%	-13.7%
None	18.6%	27.1%	8.5%	17.9%	30.8%	12.9%	24.1%	38.8%	14.7%
Rate their Spirituality as Highest 10% / Above Average compared to their peers	-	-	-	40.7%	50.6%	9.9%	30.8%	30.8%	0.0%

Spirituality/Religiosity - These items relate to religious and spiritual practices and beliefs.

**Changes in Habits of the Mind: Entering Freshman to Graduating Senior
The Freshman Survey vs. College Senior Survey**

	Change Over Time								
	TFS	Spring 2009 CSS	Change	TFS	Spring 2011 CSS	Change	TFS	Spring 2013 CSS	Change
<i>During the past year, respondents Frequently:</i>									
Accepted mistakes as part of the learning process	-	-	-	21.9%	62.5%	40.6%	53.0%	67.8%	14.8%
Looked up scientific research articles and resources	-	-	-	25.0%	59.4%	34.4%	15.0%	71.9%	56.9%
Sought solutions to problems and explain them to others	-	-	-	62.5%	78.1%	15.6%	43.0%	44.9%	1.9%
Evaluated the quality or reliability of information they received	-	-	-	41.9%	48.4%	6.5%	36.6%	56.5%	19.9%
Supported their opinions with a logical argument	-	-	-	71.9%	75.0%	3.1%	51.9%	59.3%	7.4%
Revised their papers to improve their writing	-	-	-	56.3%	56.3%	0.0%	38.1%	56.9%	18.8%
Explored topics on their own, even though it was not required for a class	-	-	-	31.3%	28.1%	-3.2%	30.0%	36.9%	6.9%
Sought feedback on their academic work	-	-	-	62.5%	56.3%	-6.2%	49.7%	60.9%	11.2%
Sought alternative solutions to a problem	-	-	-	56.3%	46.9%	-9.4%	49.4%	54.4%	5.0%
Took a risk because they felt they had more to gain	-	-	-	59.4%	43.8%	-15.6%	36.9%	35.6%	-1.3%
Ask questions in class	-	-	-	71.9%	56.3%	-15.6%	54.6%	42.3%	-12.3%

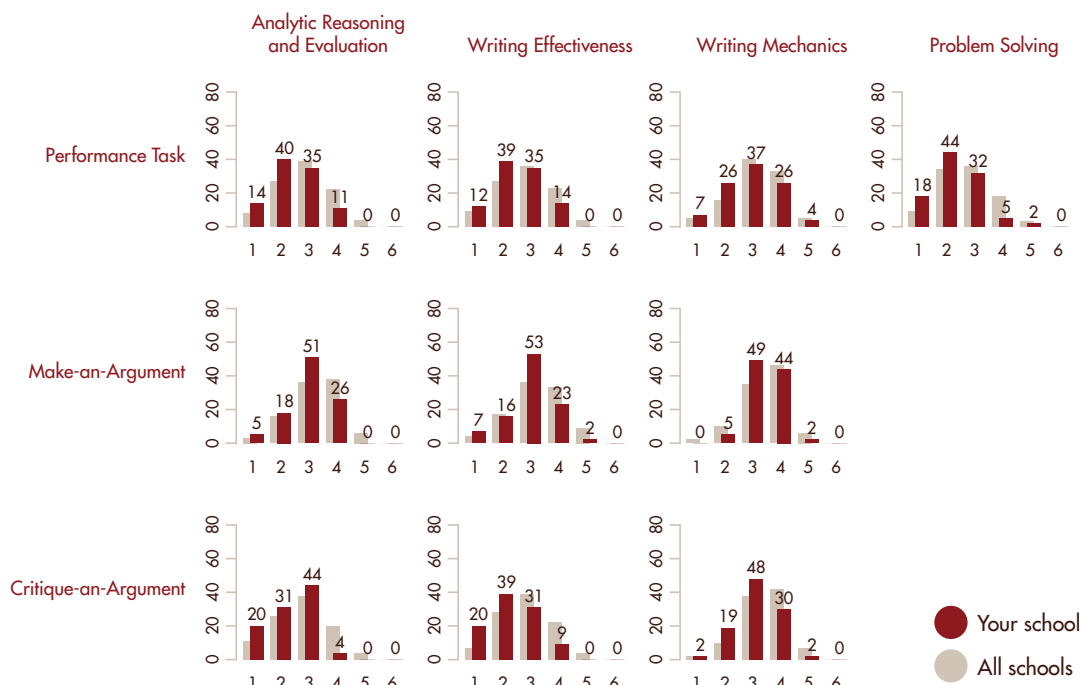
4.5 - Collegiate Learning Assessment (CLA) Results



2012-2013 CLA INSTITUTIONAL REPORT

3.8

Freshmen: Distribution of Subscores



3.9

Freshmen: Summary Subscore Statistics

		Analytic Reasoning and Evaluation		Writing Effectiveness		Writing Mechanics		Problem Solving	
		Your School	All Schools	Your School	All Schools	Your School	All Schools	Your School	All Schools
Performance Task	Mean	2.4	2.9	2.5	2.9	2.9	3.2	2.3	2.7
	Standard Deviation	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.8
Make-an-Argument	Mean	3.0	3.3	3.0	3.3	3.4	3.4		
	Standard Deviation	0.8	0.8	0.9	0.9	0.6	0.8		
Critique-an-Argument	Mean	2.3	2.8	2.3	2.9	3.1	3.4		
	Standard Deviation	0.8	0.9	0.9	0.9	0.8	0.8		

Performance Distributions

Tables 4.1 and 4.2 show the distribution of performance on the CLA across participating institutions.

Note that the unit of analysis in both tables is schools, not students.

Figure 4.3, on the following page, shows various comparisons of different groups of institutions.

Depending on which factors you consider to define your institution's peers, these comparisons may show you how your institution's value added compares to those of institutions similar to yours.

4.1

Seniors

	Number of Schools*	Mean Score	25th Percentile Score	75th Percentile Score	Standard Deviation
Total CLA Score	155	1162	1122	1220	81
Performance Task	154	1162	1118	1222	91
Analytic Writing Task	154	1163	1119	1210	79
Make-an-Argument	154	1144	1094	1195	80
Critique-an-Argument	154	1178	1130	1231	85
EAA	155	1062	993	1127	105

4.2

Freshmen

	Number of Schools*	Mean Score	25th Percentile Score	75th Percentile Score	Standard Deviation
Total CLA Score	161	1055	989	1115	89
Performance Task	161	1050	991	1113	97
Analytic Writing Task	161	1060	997	1117	86
Make-an-Argument	161	1059	1006	1114	88
Critique-an-Argument	161	1056	988	1112	89
EAA	161	1039	964	1112	112

* 152 institutions tested both freshmen and seniors.

Your 2012-2013 results consist of two components:

- CLA Institutional Report and Appendices
- CLA Student Data File

Report

The report introduces readers to the CLA and its methodology (including an enhanced value-added equation), presents your results, and offers guidance on interpretation and next steps.

- 1 Introduction to the CLA (p. 3)
- 2 Methods (p. 4-5)
- 3 Your Results (p. 6-10)
- 4 Results Across CLA Institutions (p. 11-14)
- 5 Sample of CLA Institutions (p. 15-18)
- 6 Moving Forward (p. 19)

Appendices

The report appendices offer more detail on CLA tasks, scoring and scaling, value-added equations, and the Student Data File.

- A Task Overview (p. 20-23)
- B Diagnostic Guidance (p. 24)
- C Task Development (p. 25)
- D Scoring Criteria (p. 26-28)
- E Scoring Process (p. 29)
- F Scaling Procedures (p. 30-31)
- G Modeling Details (p. 32-36)
- H Percentile Lookup Tables (p. 37-42)
- I Student Data File (p. 43)
- J CAE Board of Trustees and Officers (p. 44)

Student Data File

Your Student Data File was distributed separately as a password-protected Excel file. Your Student Data File may be used to link with other data sources and to generate hypotheses for additional research.

Assessing Higher-Order Skills

The Collegiate Learning Assessment (CLA) is a major initiative of the Council for Aid to Education. The CLA offers a value-added, constructed-response approach to the assessment of higher-order skills, such as critical thinking and written communication. Hundreds of institutions and hundreds of thousands of students have participated in the CLA to date.

The institution—not the student—is the primary unit of analysis. The CLA is designed to measure an institution's contribution, or value added, to the development of higher-order skills. This approach allows an institution to compare its student learning results on the CLA with learning results at similarly selective institutions.

The CLA is intended to assist faculty, school administrators, and others interested in programmatic change to improve teaching and

learning, particularly with respect to strengthening higher-order skills.

Included in the CLA are Performance Tasks and Analytic Writing Tasks. Performance Tasks present realistic problems that require students to analyze complex materials. Several different types of materials are used that vary in credibility, relevance to the task, and other characteristics. Students' written responses to the tasks are graded to assess their abilities to think critically, reason analytically, solve problems, and write clearly and persuasively.

The CLA helps campuses follow a continuous improvement model that positions faculty as central actors in the link between assessment and the teaching and learning process.

The continuous improvement model requires multiple indicators beyond the CLA because no single test can serve as

the benchmark for all student learning in higher education. There are, however, certain skills deemed to be important by most faculty and administrators across virtually all institutions; indeed, the higher-order skills the CLA focuses on fall into this category.

The signaling quality of the CLA is important because institutions need to have a frame of reference for where they stand and how much progress their students have made relative to the progress of students at other colleges. Yet, the CLA is not about ranking institutions. Rather, it is about highlighting differences between them that can lead to improvements. The CLA is an instrument designed to contribute directly to the improvement of teaching and learning. In this respect it is in a league of its own.

CLA Methodology

The CLA uses constructed-response tasks and value-added methodology to evaluate your students' performance reflecting the following higher-order skills: Analytic Reasoning and Evaluation, Writing Effectiveness, Writing Mechanics, and Problem Solving.

Schools test a sample of entering students (freshmen) in the fall and exiting students (seniors) in the spring. Students take one Performance Task or a combination of one Make-an-Argument prompt and one Critique-an-Argument prompt.

The interim results that your institution received after the fall testing window reflected the performance of your entering students.

Your institution's interim institutional report presented information on each

of the CLA task types, including means (averages), standard deviations (a measure of the spread of scores in the sample), and percentile ranks (the percentage of schools that had lower performance than yours). Also included was distributional information for each of the CLA subscores: Analytic Reasoning and Evaluation, Writing Effectiveness, Writing Mechanics, and Problem Solving.

This report is based on the performance of both your entering and exiting students.* Value-added modeling is often viewed as an equitable way of estimating an institution's contribution to learning. Simply comparing average achievement of all schools tends to paint selective institutions in a favorable light and discount the educational efficacy of schools admitting students from weaker academic backgrounds. Value-added modeling addresses this issue by

providing scores that can be interpreted as relative to institutions testing students of similar entering academic ability. This allows all schools, not just selective ones, to demonstrate their relative educational efficacy.

The CLA value-added estimation approach employs a statistical technique known as hierarchical linear modeling (HLM).** Under this methodology, a school's value-added score indicates the degree to which the observed senior mean CLA score meets, exceeds, or falls below expectations established by (1) seniors' Entering Academic Ability (EAA) scores*** and (2) the mean CLA performance of freshmen at that school, which serves as a control for selection effects not covered by EAA. Only students with EAA scores are included in institutional analyses.

* Note that the methods employed by the Community College Learning Assessment (CCLA) differ from those presented here. A description of those methods is available upon request.

** A description of the differences between the original OLS model and the enhanced HLM model is available in the Frequently Asked Technical Questions document distributed with this report.

*** SAT Math + Critical Reading, ACT Composite, or Scholastic Level Exam (SLE) scores on the SAT scale. Hereinafter referred to as Entering Academic Ability (EAA).

When the average performance of seniors at a school is substantially better than expected, this school is said to have high “value added.” To illustrate, consider several schools admitting students with similar average performance on general academic ability tests (e.g., the SAT or ACT) and on tests of higher-order skills (e.g., the CLA). If, after four years of college education, the seniors at one school perform better on the CLA than is typical for schools admitting similar students, one can infer that greater gains in critical thinking and writing skills occurred at the highest performing school. Note that a low (negative) value-added score does not necessarily indicate that no gain occurred between freshman and senior year; however, it

does suggest that the gain was lower than would typically be observed at schools testing students of similar entering academic ability.

Value-added scores are placed on a standardized (z -score) scale and assigned performance levels. Schools that fall between -1.00 and +1.00 are classified as “near expected,” between +1.00 and +2.00 are “above expected,” between -1.00 and -2.00 are “below expected,” above +2.00 are “well above expected,” and below -2.00 are “well below expected.” Value-added estimates are also accompanied by confidence intervals, which provide information on the precision of the estimates; narrow confidence intervals indicate that the

estimate is more precise, while wider intervals indicate less precision.

Our analyses include results from all CLA institutions, regardless of sample size and sampling strategy. Therefore, we encourage you to apply due caution when interpreting your results if you tested a very small sample of students or believe that the students in your institution’s sample are not representative of the larger student body.

Moving forward, we will continue to employ methodological advances to maximize the precision of our value-added estimates. We will also continue developing ways to augment the value of CLA results for the improvement of teaching and learning.

3.1 Value-Added and Precision Estimates

	Performance Level	Value-Added Score	Value-Added Percentile Rank	Confidence Interval Lower Bound	Confidence Interval Upper Bound	Expected Mean CLA Score
Total CLA Score	Near	0.74	80	0.13	1.35	1128
Performance Task	Near	0.86	88	0.17	1.55	1122
Analytic Writing Task	Near	0.38	63	-0.36	1.12	1136
Make-an-Argument	Near	0.52	67	-0.33	1.37	1124
Critique-an-Argument	Near	0.31	65	-0.42	1.04	1140

3.2 Seniors: Unadjusted Performance

	Number of Seniors	Mean Score	Mean Score Percentile Rank	25th Percentile Score	75th Percentile Score	Standard Deviation
Total CLA Score	65	1167	54	1089	1269	135
Performance Task	33	1179	59	1063	1282	151
Analytic Writing Task	32	1155	46	1101	1240	117
Make-an-Argument	32	1150	54	1059	1255	123
Critique-an-Argument	32	1159	40	1106	1266	157
EAA	65	1033	41	950	1110	115

3.3 Freshmen: Unadjusted Performance

	Number of Freshmen	Mean Score	Mean Score Percentile Rank	25th Percentile Score	75th Percentile Score	Standard Deviation
Total CLA Score	111	984	24	887	1074	134
Performance Task	57	973	22	839	1063	149
Analytic Writing Task	54	995	23	894	1074	118
Make-an-Argument	57	1015	32	898	1132	135
Critique-an-Argument	54	962	16	873	1080	149
EAA	114	974	27	890	1050	117

3.4

Student Sample Summary

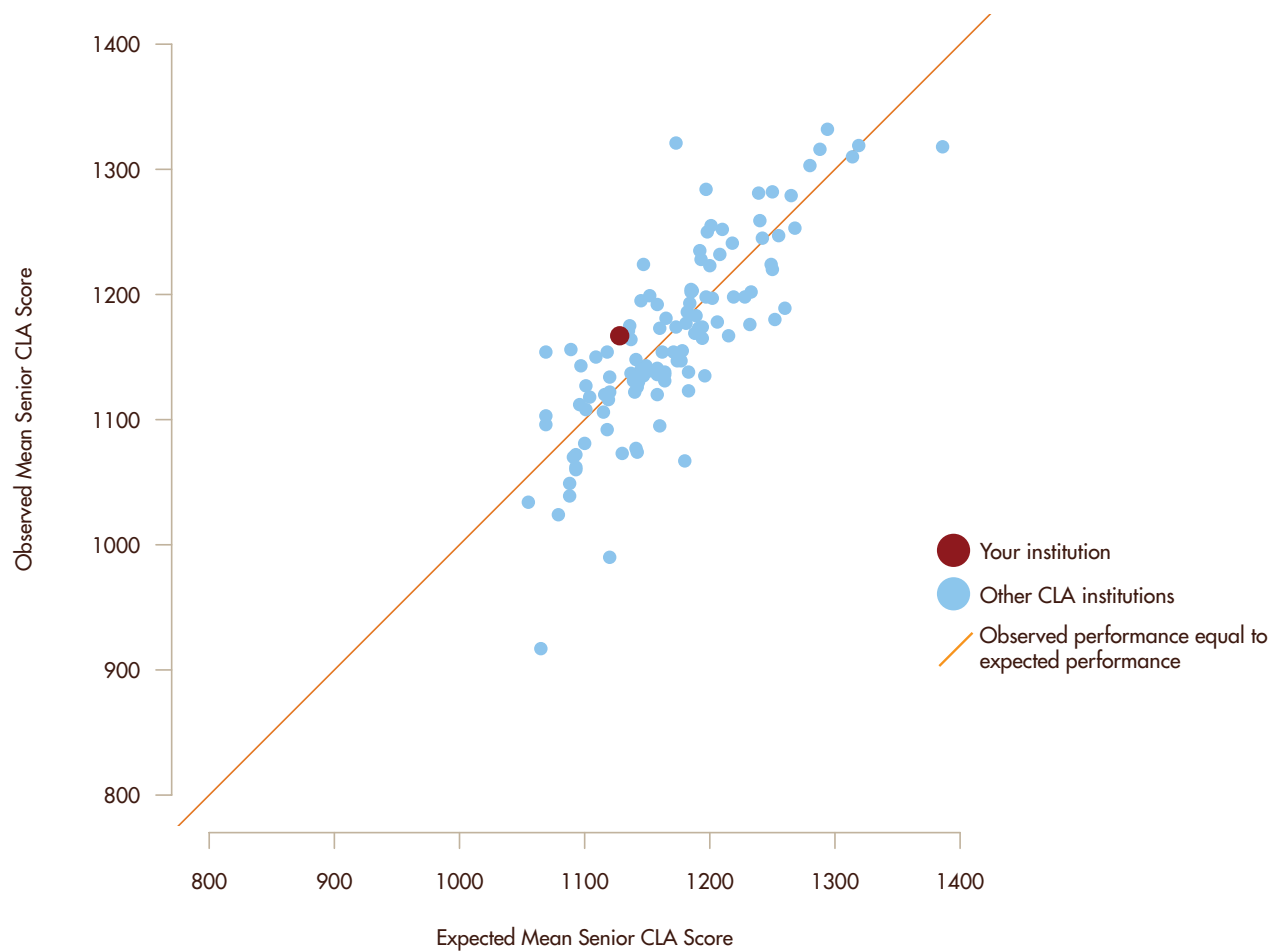
	Number of Freshmen	Freshman Percentage	Average Freshman Percentage Across Schools	Number of Seniors	Senior Percentage	Average Senior Percentage Across Schools
Transfer						
Transfer Students				0	0	17
Non-Transfer Students				65	100	83
Gender						
Male	32	29	38	16	25	39
Female	78	70	61	49	75	61
Decline to State	1	1	0	0	0	1
Primary Language						
English Primary Language	92	83	84	50	77	86
Other Primary Language	19	17	16	15	23	14
Field of Study						
Sciences and Engineering	13	12	24	6	9	22
Social Sciences	9	8	12	17	26	18
Humanities and Languages	9	8	10	21	32	16
Business	9	8	11	10	15	16
Helping / Services	32	29	25	8	12	22
Undecided / Other / N/A	39	35	18	3	5	6
Race / Ethnicity						
American Indian / Alaska Native	0	0	1	1	2	0
Asian / Pacific Islander	16	14	9	3	5	8
Black, Non-Hispanic	3	3	11	3	5	10
Hispanic	28	25	16	18	28	14
White, Non-Hispanic	56	50	55	36	55	60
Other	5	5	4	3	5	4
Decline to State	3	3	4	1	2	3
Parent Education						
Less than High School	9	8	6	7	11	5
High School	22	20	23	11	17	16
Some College	31	28	23	18	28	27
Bachelor's Degree	31	28	27	19	29	29
Graduate or Professional Degree	18	16	21	10	15	23

Performance Compared to Other Institutions

Figure 3.5 shows the performance of all four-year colleges and universities,* relative to their expected performance as predicted by the value-added model. The vertical distance from the diagonal line indicates the value added by the institution; institutions falling above the diagonal line are those that add more value than expected based on the model. Your institution is highlighted in red. See Appendix G for details on how the Total CLA Score value-added estimates displayed in this figure were computed.

3.5

Observed CLA Scores vs. Expected CLA Scores



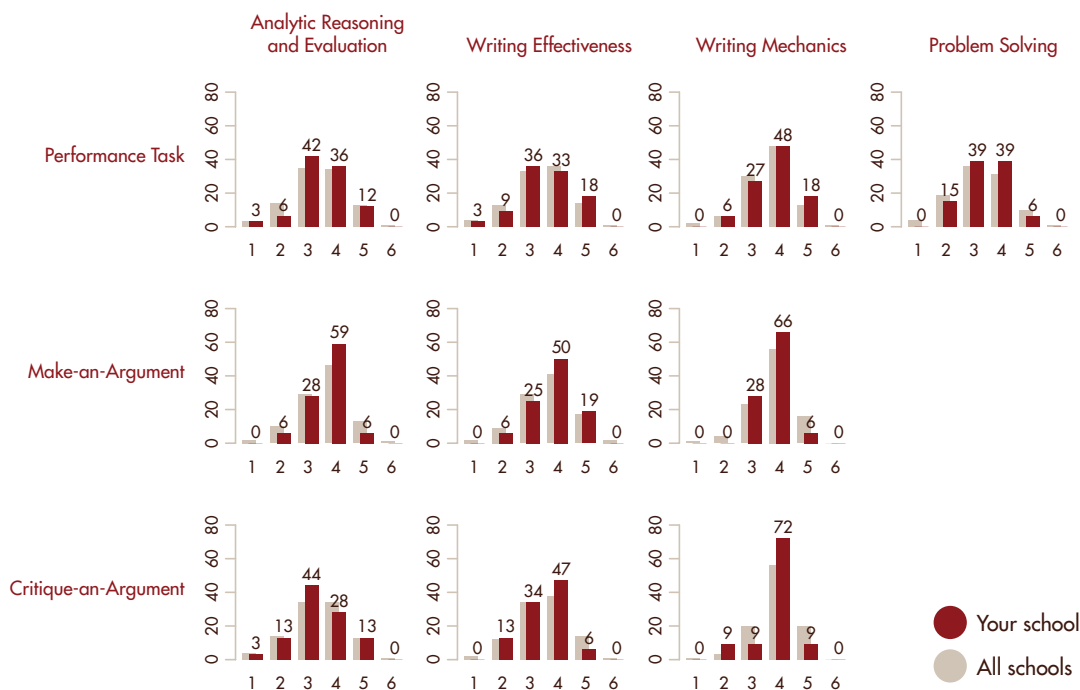
* Due to the low statistical reliability of small sample sizes, schools that tested fewer than 50 students are not included in Figure 3.5.

Subscore Distributions

Figures 3.6 and 3.8 display the distribution of your students' performance in the subscore categories of Analytic Reasoning and Evaluation, Writing Effectiveness, Writing Mechanics, and Problem Solving. The numbers on the graph correspond to the percentage of *your* students that performed at each score level. The distribution of subscores across *all* schools is presented for comparative purposes. The score levels range from 1 to 6. Note that the graphs presented are not directly comparable due to potential differences in difficulty among task types and among subscore categories. See *Diagnostic Guidance* and *Scoring Criteria* for more details on the interpretation of subscore distributions. Tables 3.7 and 3.9 present the mean and standard deviation of each of the subscores across CLA task types—for your school and all schools.

3.6

Seniors: Distribution of Subscores



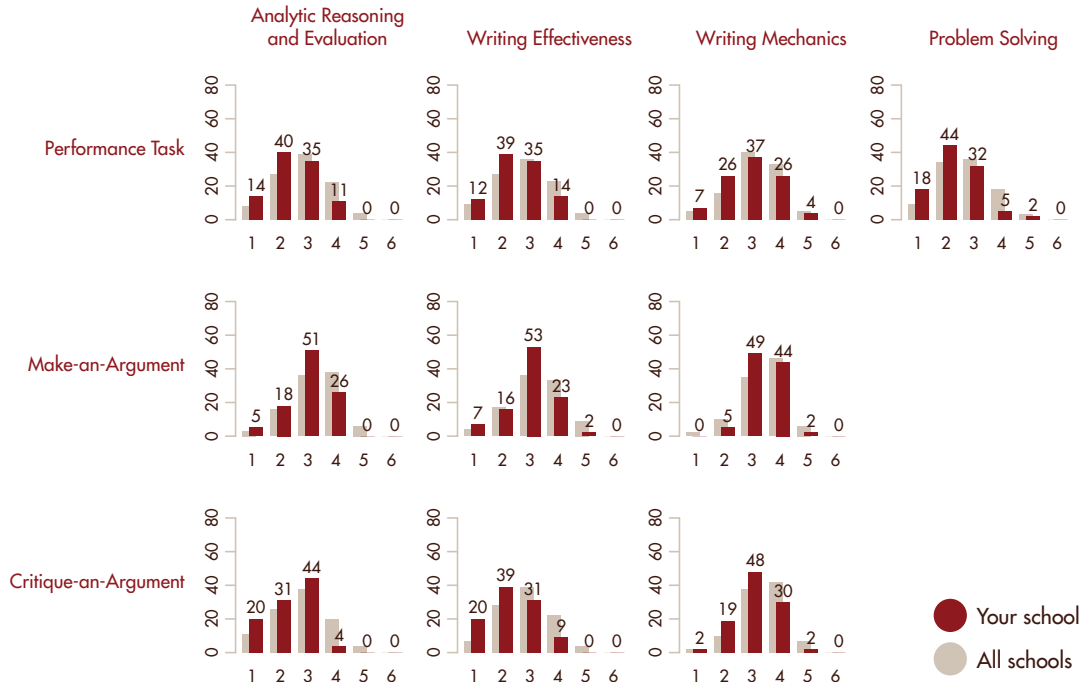
3.7

Seniors: Summary Subscore Statistics

		Analytic Reasoning and Evaluation		Writing Effectiveness		Writing Mechanics		Problem Solving	
		Your School	All Schools	Your School	All Schools	Your School	All Schools	Your School	All Schools
Performance Task	Mean	3.5	3.4	3.5	3.5	3.8	3.7	3.4	3.3
	Standard Deviation	0.9	0.9	1.0	0.9	0.8	0.8	0.8	0.9
Make-an-Argument	Mean	3.7	3.6	3.8	3.7	3.8	3.8		
	Standard Deviation	0.7	0.8	0.8	0.9	0.6	0.7		
Critique-an-Argument	Mean	3.3	3.4	3.5	3.5	3.8	3.9		
	Standard Deviation	1.0	0.9	0.8	0.9	0.7	0.7		

3.8

Freshmen: Distribution of Subscores



3.9

Freshmen: Summary Subscore Statistics

		Analytic Reasoning and Evaluation		Writing Effectiveness		Writing Mechanics		Problem Solving	
		Your School	All Schools	Your School	All Schools	Your School	All Schools	Your School	All Schools
Performance Task	Mean	2.4	2.9	2.5	2.9	2.9	3.2	2.3	2.7
	Standard Deviation	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.8
Make-an-Argument	Mean	3.0	3.3	3.0	3.3	3.4	3.4		
	Standard Deviation	0.8	0.8	0.9	0.9	0.6	0.8		
Critique-an-Argument	Mean	2.3	2.8	2.3	2.9	3.1	3.4		
	Standard Deviation	0.8	0.9	0.9	0.9	0.8	0.8		

Performance Distributions

Tables 4.1 and 4.2 show the distribution of performance on the CLA across participating institutions.

Note that the unit of analysis in both tables is schools, not students.

Figure 4.3, on the following page, shows various comparisons of different groups of institutions.

Depending on which factors you consider to define your institution's peers, these comparisons may show you how your institution's value added compares to those of institutions similar to yours.

4.1

Seniors

	Number of Schools*	Mean Score	25th Percentile Score	75th Percentile Score	Standard Deviation
Total CLA Score	155	1162	1122	1220	81
Performance Task	154	1162	1118	1222	91
Analytic Writing Task	154	1163	1119	1210	79
Make-an-Argument	154	1144	1094	1195	80
Critique-an-Argument	154	1178	1130	1231	85
EAA	155	1062	993	1127	105

4.2

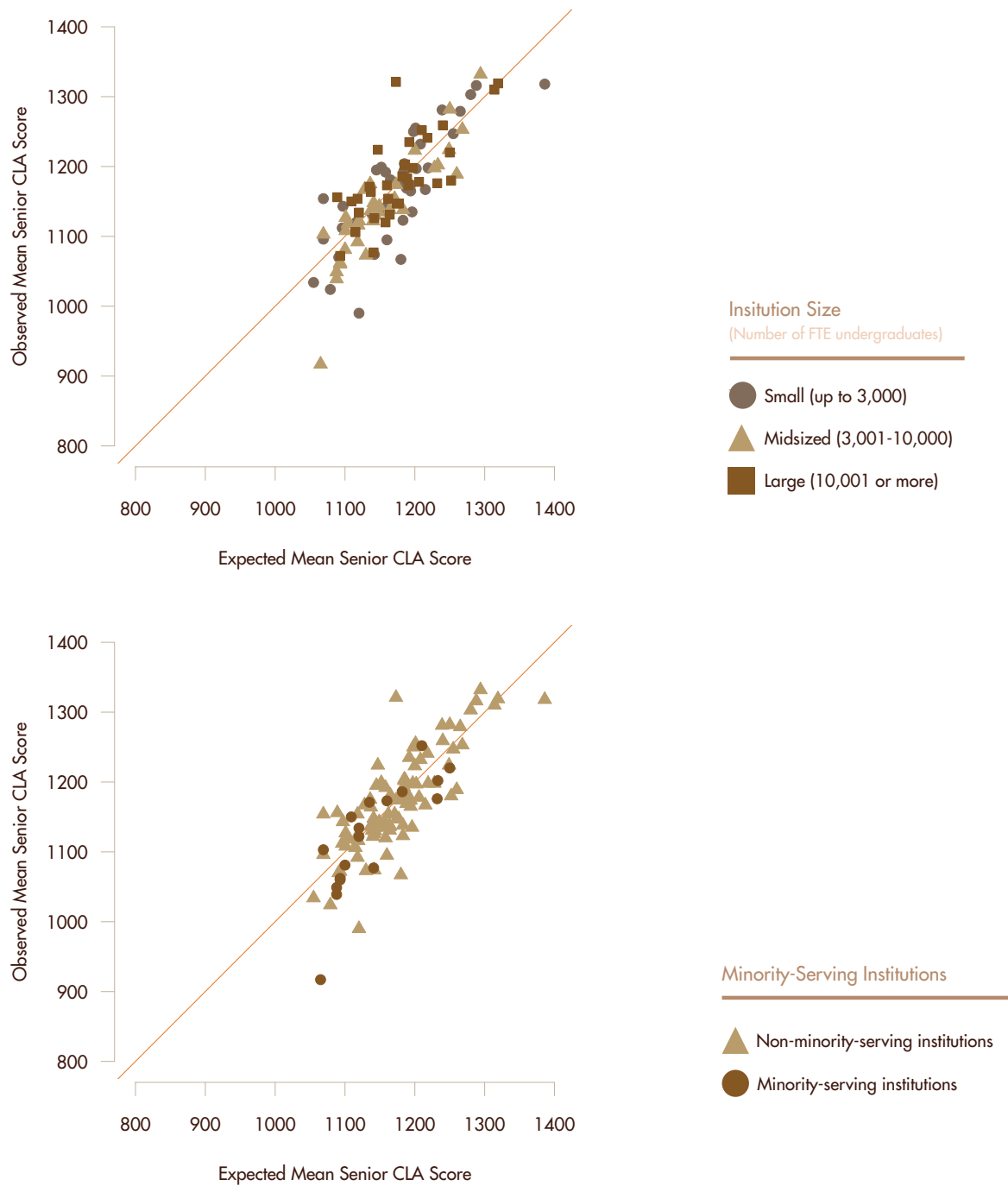
Freshmen

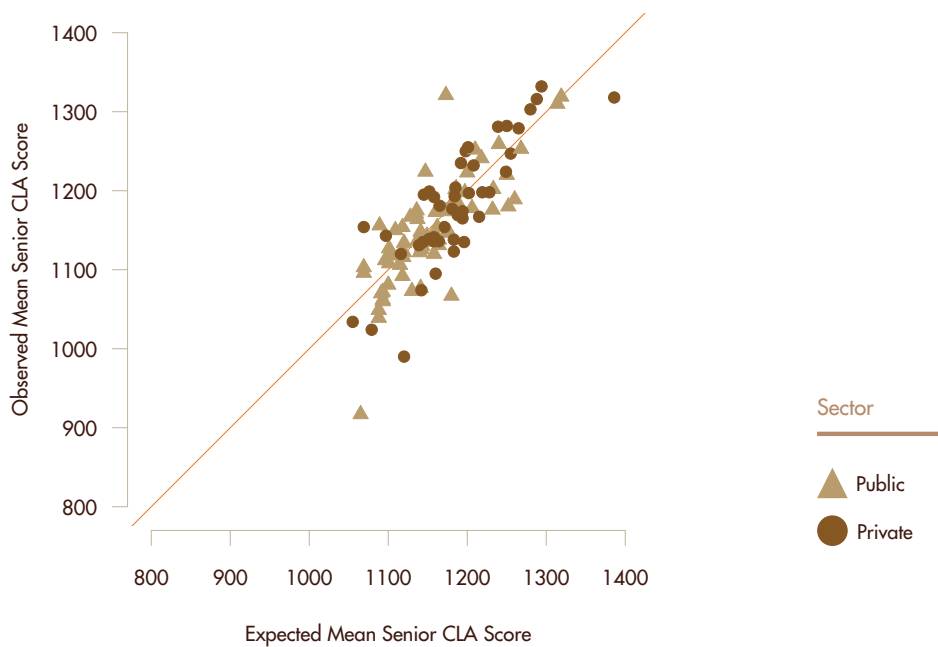
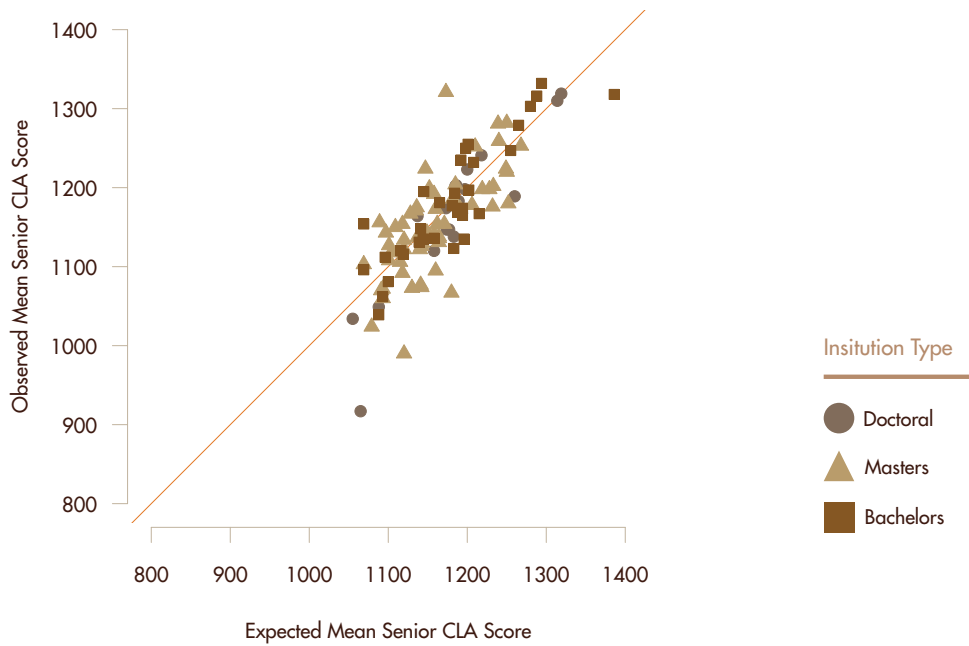
	Number of Schools*	Mean Score	25th Percentile Score	75th Percentile Score	Standard Deviation
Total CLA Score	161	1055	989	1115	89
Performance Task	161	1050	991	1113	97
Analytic Writing Task	161	1060	997	1117	86
Make-an-Argument	161	1059	1006	1114	88
Critique-an-Argument	161	1056	988	1112	89
EAA	161	1039	964	1112	112

* 152 institutions tested both freshmen and seniors.

4.3

Peer Group Comparisons





Sample Representativeness

CLA-participating students appeared to be generally representative of their classmates with respect to entering ability levels as measured by Entering Academic Ability (EAA) scores.

Specifically, across institutions, the average EAA score of CLA seniors (as verified by the registrar) was only 16 points higher than that of the entire senior class*: 1067 versus 1051 ($n = 132$ institutions). Further, the correlation between the average EAA score of CLA seniors and their classmates was high ($r = 0.94$, $n = 132$ institutions).

The pattern for freshmen was similar. The average EAA score of CLA freshmen was only 2 points higher than that of the entire freshman class (1048 versus 1046, over $n = 131$ institutions), and the correlation between the average EAA score of CLA freshmen and their classmates was similarly high ($r = 0.94$, $n = 131$ institutions).

These data suggest that as a group, CLA participants were similar to all students at participating schools. This correspondence increases confidence in the inferences that can be made from the results with the samples of students that were tested at a school to all the students at that institution.

* As reported by school registrars.

Carnegie Classification

Table 5.1 shows CLA schools grouped by Basic Carnegie Classification. The spread of schools corresponds fairly well with that of the 1,587 four-year, not-for-profit institutions across the nation.

Table 5.1 counts exclude some institutions that do not fall into these categories, such as Special Focus Institutions and institutions based outside of the United States.

5.1

Carnegie Classification of Institutional Sample

Carnegie Classification	Nation (n = 1,587)		CLA (n = 146)	
	Number	Percentage	Number	Percentage
Doctorate-granting Universities	275	17	21	14
Master's Colleges and Universities	619	39	76	52
Baccalaureate Colleges	693	44	48	33

Source: Carnegie Foundation for the Advancement of Teaching, Carnegie Classifications Data File, February 11, 2010.

School Characteristics

Table 5.2 provides statistics on some important characteristics of colleges and universities across the nation compared with CLA schools. These statistics suggest that CLA schools are fairly representative of four-year, not-for-profit institutions nationally. Percentage public and undergraduate student body size are exceptions.

School Characteristics of Institutional Sample

School Characteristic	Nation	CLA
Percentage public	32	56
Percentage Historically Black College or University (HBCU)	5	4
Mean percentage of undergraduates receiving Pell grants	31	30
Mean six-year graduation rate	51	51
Mean Barron's selectivity rating	3.6	3.1
Mean estimated median SAT score	1058	1035
Mean number of FTE undergraduate students (rounded)	3,869	6,844
Mean student-related expenditures per FTE student (rounded)	\$12,330	\$10,849

Source: College Results Online dataset, managed by and obtained with permission from the Education Trust, covers most 4-year Title IV-eligible higher-education institutions in the United States. Data were constructed from IPEDS and other sources. Because all schools did not report on every measure in the table, the averages and percentages may be based on slightly different denominators.

The institutions listed here in alphabetical order agreed to be identified as participating schools and may or may not have been included in comparative analyses.

CLA Schools

Alaska Pacific University	CUNY - Brooklyn College	Ouachita Baptist University
Albion College	CUNY - College of Staten Island	Our Lady of the Lake University
Amherst College	CUNY - Hunter College	Pacific Lutheran University
Ashland University	CUNY - John Jay College of Criminal Justice	Pittsburg State University
Auburn University	CUNY - Lehman College	Presbyterian College
Augsburg College	CUNY - New York City College of Technology	Quest University
Augustana College (SD)	CUNY - Queens College	Randolph-Macon College
Barton College	CUNY - The City College of New York	Robert Morris University
Bellarmine University	CUNY - York College	Rockford College
Beloit College	Dillard University	Saginaw Valley State University
Bluefield State College	Eckerd College	Saint Anselm College
Bowling Green State University	Emory & Henry College	Saint Xavier University
Bradley University	Emporia State University	San Diego State University
Brigham Young University - Idaho	Fairmont State University	San Francisco State University
Buena Vista University	Fayetteville State University	San Jose State University
Buffalo State College - SUNY	Flagler College	Seton Hill University
California Maritime Academy	Florida International University Honors College	Shepherd University
California State Polytechnic University, Pomona	Florida State University	Slippery Rock University
California State Polytechnic University, San Luis Obispo	Fort Hays State University	Sonoma State University
California State University System	Gordon College	Southern Oregon University
California State University, Bakersfield	Grand Canyon University	Southwestern University
California State University, Channel Islands	Hardin-Simmons University	St. Olaf College
California State University, Chico	Hastings College	Sul Ross State University
California State University, Dominguez Hills	Humboldt State University	SUNY College of Technology at Canton
California State University, East Bay	Illinois College	Texas A&M University-Kingsville
California State University, Fresno	Indiana University of Pennsylvania	Texas State University-San Marcos
California State University, Fullerton	Indiana Wesleyan University, Department of Psychology	The Citadel
California State University, Long Beach	Jacksonville State University	The College of Idaho
California State University, Los Angeles	Jamestown College	The College of St. Scholastica
California State University, Monterey Bay	Johnson & Wales University	The Richard Stockton College of New Jersey
California State University, Northridge	Kalamazoo College	The Sage Colleges
California State University, Sacramento	Kent State University	The University of Toledo
California State University, San Bernardino	King's College	Transylvania University
California State University, San Marcos	LaGrange College	Truman State University
California State University, Stanislaus	Lewis University	University of Bridgeport
Centenary College	Loyola University New Orleans	University of Evansville
Centenary College of Louisiana	Luther College	University of Great Falls
Central Michigan University	Lynchburg College	University of Hartford
Chatham University	Lynn University	University of Hawaii at Hilo College of Business and Economics
City University of New York, 4-Year Colleges	Macalester College	University of Houston-Downtown
Clarke University	Marshall University	University of Missouri-St. Louis
College of Saint Benedict and Saint John's University	McMurry University	University of Ottawa
Colorado Mountain College, Bachelors Program	Mercer University	University of Pittsburgh
Colorado State University	Morgan State University	University of Saint Mary
Concord University	Nevada State College	University of St. Thomas (TX)
CUNY - Baruch College	New York University, Abu Dhabi	University of Texas - Pan American
	Newman University	University of Texas at Arlington
	Northern Illinois University	University of Texas at Austin
	Nyack College	University of Texas at Dallas

University of Texas at El Paso
 University of Texas at San Antonio
 University of Texas at Tyler
 University of Texas of the Permian Basin
 University of Texas System
 University of the Ryukyus, Department of
 Languages and Cultures
 University of the Virgin Islands
 University of Vermont
 University of Windsor, Faculties of Nursing, Arts
 & Social Science, and Engineering
 Weber State University
 West Liberty University
 West Virginia State Colleges and Universities
 West Virginia University
 Western Governors University
 Western Washington University
 Westminster College (MO)
 Westminster College (UT)
 Wichita State University
 Wichita State University (School of Engineering)
 William Peace University
 Winston-Salem State University
 Wisconsin Lutheran College
 Wyoming Catholic College

CWRA Schools

Akins High School
 Albemarle High School
 Anson New Tech High School
 Asheville School
 Barrie School
 Bayside High School
 Bosque School
 Brimmer and May School
 Brooks School
 Catalina Foothills High School
 Collegiate School
 Colorado Academy
 Colorado Rocky Mountain School
 Crystal Springs Uplands School
 Culver Academies
 Currey Ingram Academy
 Da Vinci Charter Academy
 Eagle Rock School
 First Colonial High School
 Floyd Kellam High School
 Fountain Valley School of Colorado
 Frank W. Cox High School
 Friends School of Baltimore
 Gilmour Academy

Graettinger-Terril High School
 Green Run High School
 Greensboro Day School
 Hebron Academy
 Heritage Hall
 Hillside New Tech High School
 Illinois Mathematics and Science Academy
 Jefferson Forest High School
 Kempsville High School
 Kimball Union Academy
 Lake Forest Academy
 Lake Highland Preparatory School
 Landstown High School
 Le Jardin Academy
 Los Angeles School of Global Studies
 Maryknoll High School
 Math, Engineering, Technology, and Science
 Academy
 McKinley Academy
 Mead High School
 Mead School District
 Metairie Park Country Day School
 Mid-Pacific Institute
 Monticello High School
 Moorestown Friends School
 Moses Brown School
 Mount Vernon Presbyterian School
 Mt. Spokane High School
 Murray High School
 Nanakuli High and Intermediate School
 Napa New Tech High School
 National Association of Independent Schools
 New Tech Network
 Newell-Fonda High School
 Ocean Lakes High School
 Palisades High School
 Prairie Lakes Area Education Agency
 Princess Anne High School
 Ramsey High School
 Reading Memorial High School
 Regional School Unit 13
 Renaissance Academy
 Riverdale Country School
 Sacramento New Tech High School
 Sacred Hearts Academy
 Salem Academy
 Salem High School
 Sandia Preparatory School
 School of IDEAS
 Severn School
 Sonoma Academy
 St. Andrew's School

St. Christopher's School
 St. George's Independent School
 St. Gregory College Preparatory School
 St. Luke's School
 St. Margaret's Episcopal School
 Staunton River High School
 Stevenson School
 Stuart Country Day School
 Takatuf Scholars
 Tallwood High School
 Tech Valley High School
 Tesseract School
 The Haverford School
 The Hotchkiss School
 The Hun School of Princeton
 The Lovett School
 The Taft School
 The Webb School
 Traverse Bay Area Intermediate School District
 Upper Arlington High School
 Virginia Beach School District
 Waianae High School
 Warren New Tech High School
 Warwick Valley High School
 Watershed School
 Western Albemarle High School
 Westtown School
 Wildwood School
 York School

CCLA Schools

Arizona Western College
 Cecil College
 City University of New York, Community
 Colleges
 Collin College
 Colorado Mountain College
 CUNY - Borough of Manhattan Community
 College
 CUNY - Bronx Community College
 CUNY - Hostos Community College
 CUNY - Kingsborough Community College
 CUNY - LaGuardia Community College
 CUNY - Medgar Evers College
 CUNY - Queensborough Community College
 Fanshawe College of Applied Arts and
 Technology, Health Science Program
 Howard Community College
 Truckee Meadows Community College

Using the CLA to Improve Institutional Performance

The information presented in your institutional report—enhanced most recently through the provision of subscores (see pages 9-10)—is designed to help you better understand the contributions your institution is making toward your students' learning gains. However, the institutional report alone provides but a snapshot of student performance.

When combined with the other tools and services the CLA has to offer, the institutional report can become a powerful tool in helping you and your institution target specific areas of improvement, while effectively and authentically aligning teaching, learning, and assessment practices in ways that may improve institutional performance over time.

We encourage institutions to examine performance across CLA tasks and communicate the results across campus, link student-level CLA results with other data sources, pursue in-depth sampling, collaborate with their peers, and participate in professional development offerings.

Student-level CLA results are provided for you to link to other data sources (e.g., course-taking patterns, grades, portfolios, student surveys, etc.). These results are strengthened by the provision of additional scores in the areas of Analytic Reasoning and Evaluation, Writing Effectiveness, Writing Mechanics, and Problem Solving to help you pinpoint specific areas that may need improvement. Internal analyses, which you can pursue through in-depth sampling, can help you generate hypotheses for additional research.

While peer-group comparisons are provided to you in this report (see pages 12-13), the true strength of peer learning comes through collaboration. CLA facilitates collaborative relationships among our participating schools by encouraging the formation of consortia, hosting periodic web conferences featuring campuses doing promising work using the CLA, and sharing school-specific contact information (where permission has been granted) via our CLA contact map (www.collegiatelearningassessment.org/contact).

Our professional development services shift the focus from general assessment to the course-level work of faculty members. Performance Task Academies—two-day hands-on training workshops—provide opportunities for faculty to receive guidance in creating their own CLA-like performance tasks, which can be used as classroom or homework assignments, curriculum devices, or even local-level assessments (see: cae.org/performance-assessment/category/training-workshops).

Through the steps noted above, we encourage institutions to move toward a continuous system of improvement stimulated by the CLA. Our programs and services—when used in combination—are designed to emphasize the notion that, in order to successfully improve higher-order skills, institutions must genuinely connect their teaching, learning, and assessment practices in authentic and effective ways.

Without your contributions, the CLA would not be on the exciting path that it is today. We look forward to your continued involvement!

An Introduction to the CLA Tasks

The CLA consists of a Performance Task and an Analytic Writing Task. Students are randomly assigned to take one or the other. The Analytic Writing Task includes a pair of prompts called Make-an-Argument and Critique-an-Argument.

All CLA tasks are administered online and consist of open-ended prompts that require constructed responses. There are no multiple-choice questions.

The CLA requires that students use critical thinking and written communication skills to perform cognitively demanding tasks. The integration of these skills mirrors the requirements of serious thinking and writing tasks faced in life outside of the classroom.

Performance Task

Each Performance Task requires students to use an integrated set of critical thinking, analytic reasoning, problem solving, and written communication skills to answer several open-ended questions about a hypothetical but realistic situation. In addition to directions and questions, each Performance Task also has its own Document Library that includes a range of information sources, such as: letters, memos, summaries of research reports, newspaper articles, maps, photographs, diagrams, tables, charts, and interview notes or transcripts. Students are instructed to use these materials in preparing their answers to the Performance Task's questions within the allotted 90 minutes.

The first portion of each Performance Task contains general instructions and introductory material. The student is then presented with a split screen. On the right side of the screen is a list of the materials in the Document Library. The student selects a particular document to view by using a pull-down menu. A question and a response box are on the

left side of the screen. There is no limit on how much a student can type. Upon completing a question, students then select the next question in the queue.

No two Performance Tasks assess the exact same combination of skills. Some ask students to identify and then compare and contrast the strengths and limitations of alternative hypotheses, points of view, courses of action, etc. To perform these and other tasks, students may have to weigh different types of evidence, evaluate the credibility of various documents, spot possible bias, and identify questionable or critical assumptions.

Performance Tasks may also ask students to suggest or select a course of action to resolve conflicting or competing strategies and then provide a rationale for that decision, including why it is likely to be better than one or more other approaches. For example, students may be asked to anticipate potential difficulties or hazards that are associated with different ways of dealing with a problem, including the likely

short- and long-term consequences and implications of these strategies. Students may then be asked to suggest and defend one or more of these approaches. Alternatively, students may be asked to review a collection of materials or a set of options, then analyze and organize them on multiple dimensions, and ultimately defend that organization.

Performance Tasks often require students to marshal evidence from different sources; distinguish rational arguments from emotional ones and fact from opinion; understand data in tables and figures; deal with inadequate, ambiguous, and/or conflicting information; spot deception and holes in the arguments made by others; recognize information that is and is not relevant to the task at hand; identify additional information that would help to resolve issues; and weigh, organize, and synthesize information from several sources.

Analytic Writing Task

Students write answers to two types of essay tasks: a Make-an-Argument prompt that asks them to support or reject a position on some issue; and a Critique-an-Argument prompt that asks them to evaluate the validity of an argument made by someone else. Both of these tasks measure a student's skill in articulating complex ideas, examining claims and evidence, supporting ideas with relevant reasons and examples, sustaining a coherent discussion, and using standard written English.

Make-an-Argument

A Make-an-Argument prompt typically presents an opinion on some issue and asks students to write, in 45 minutes, a persuasive analytic essay to support a position on the issue. Key elements include: establishing a thesis or a position on an issue; maintaining the thesis throughout the essay; supporting the thesis with relevant and persuasive examples (e.g., from personal experience, history, art, literature, pop culture, or current events); anticipating and countering opposing arguments to the position; fully developing ideas, examples, and arguments; organizing the structure of the essay to maintain the flow of the argument (e.g., paragraphing, ordering of ideas and sentences within paragraphs, use of transitions); and employing varied sentence structure and advanced vocabulary.

Critique-an-Argument

A Critique-an-Argument prompt asks students to evaluate, in 30 minutes, the reasoning used in an argument (rather than simply agreeing or disagreeing with the position presented). Key elements of the essay include: identifying a variety of logical flaws or fallacies in a specific argument; explaining how or why the logical flaws affect the conclusions in that argument; and presenting a critique in a written response that is grammatically correct, organized, well-developed, and logically sound.

Example Performance Task

You advise Pat Williams, the president of DynaTech, a company that makes precision electronic instruments and navigational equipment. Sally Evans, a member of DynaTech's sales force, recommended that DynaTech buy a small private plane (a SwiftAir 235) that she and other members of the sales force could use to visit customers. Pat was about to approve the purchase when there was an accident involving a SwiftAir 235.

Example Document Library

Your Document Library contains the following materials:

- Newspaper article about the accident
- Federal Accident Report on in-flight breakups in single-engine planes
- Internal correspondence (Pat's email to you and Sally's email to Pat)
- Charts relating to SwiftAir's performance characteristics
- Excerpt from a magazine article comparing SwiftAir 235 to similar planes
- Pictures and descriptions of SwiftAir Models 180 and 235

Example Questions

- Do the available data tend to support or refute the claim that the type of wing on the SwiftAir 235 leads to more in-flight breakups?
- What is the basis for your conclusion?
- What other factors might have contributed to the accident and should be taken into account?
- What is your preliminary recommendation about whether or not DynaTech should buy the plane and what is the basis for this recommendation?

Example Make-an-Argument

There is no such thing as "truth" in the media. The one true thing about information media is that it exists only to entertain.

Example Critique-an-Argument

A well-respected professional journal with a readership that includes elementary school principals recently published the results of a two-year study on childhood obesity. (Obese individuals are usually considered to be those who are 20% above their recommended weight for height and age.) This study sampled 50 schoolchildren, ages five to 11, from Smith Elementary School.

A fast food restaurant opened near the school just before the study began. After two years, students who remained in the sample group were more likely to be overweight—relative to the national average. Based on this study, the principal of Jones Elementary School decided to confront her school's obesity problem by opposing any fast food restaurant openings near her school.

Interpreting CLA Results

CLA results operate as a signaling tool of overall institutional performance on tasks that measure higher-order skills. Examining performance across CLA task types can serve as an initial diagnostic exercise. The three types of CLA tasks—Performance Task, Make-an-Argument, and Critique-an-Argument—differ in the combination of skills necessary to perform well.

The Make-an-Argument and Critique-an-Argument tasks measure Analytic Reasoning and Evaluation, Writing Effectiveness, and Writing Mechanics. The Performance Task measures Problem Solving in addition to the three aforementioned skills. Each of the skills are assessed in slightly different ways within the context of each task type. For example, in the context of the Performance Task and the Critique-an-Argument task, Analytic Reasoning and Evaluation involves interpreting,

analyzing, and evaluating the quality of information. In the Make-an-Argument task, Analytic Reasoning and Evaluation involves stating a position, providing valid reasons to support the writer's position, and considering and possibly refuting alternative viewpoints.

Subscores are assigned on a scale of 1 (lowest) to 6 (highest). Subscores are not directly comparable to one another because they are not adjusted for difficulty like CLA scale scores. The subscores remain unadjusted because they are intended to facilitate criterion-referenced interpretations. For example, a "4" in Analytic Reasoning and Evaluation means that a response had certain qualities (e.g., "Identifies a few facts or ideas that support or refute all major arguments"), and any adjustment to that score would compromise the interpretation.

The ability to make claims like, "Our students seem to be doing better in Writing Effectiveness than in Problem Solving on the Performance Task" is clearly desirable. This can be done by comparing each subscore distribution to its corresponding reference distribution displayed in Figures 3.6 and 3.8 of your institutional report. You can support claims like the one above if you see, for example, that students are performing above average in Writing Effectiveness, but not in Problem Solving on the Performance Task.

Please examine the results presented in Figures 3.6 & 3.8 and Tables 3.7 & 3.9 in combination with the *Scoring Criteria* in the next section to explore the areas where your students may need improvement.

Iterative Development Process

A team of researchers and writers generates ideas for Make-an-Argument and Critique-an-Argument prompts and Performance Task storylines, and then contributes to the development and revision of the prompts and Performance Task documents.

For Analytic Writing Tasks, multiple prompts are generated, revised and pre-piloted, and those prompts that elicit good critical thinking and writing responses during pre-piloting are further revised and submitted to more extensive piloting.

During the development of Performance Tasks, care is taken to ensure that sufficient information is provided to permit multiple reasonable solutions to the issues present in the Performance Task. Documents are crafted such that information is presented in multiple formats (e.g., tables, figures, news articles, editorials, letters, etc.).

While developing a Performance Task, a list of the intended content from each document is established and revised.

This list is used to ensure that each piece of information is clearly reflected in the document and/or across documents, and to ensure that no additional pieces of information are embedded in the document that were not intended. This list serves as a draft starting point for the analytic scoring items used in the Performance Task scoring rubrics.

During revision, information is either added to documents or removed from documents to ensure that students could arrive at approximately three or four different conclusions based on a variety of evidence to back up each conclusion. Typically, some conclusions are designed to be supported better than others.

Questions for the Performance Task are also drafted and revised during the development of the documents. The questions are designed such that the initial questions prompt students to read and attend to multiple sources of information in the documents, and later questions require students to evaluate the documents and then use their analyses to draw conclusions and justify those conclusions.

After several rounds of revision, the most promising of the Performance Tasks and the Make-an-Argument and Critique-an-Argument prompts are selected for pre-piloting. Student responses from the pre-pilot test are examined to identify what pieces of information are unintentionally ambiguous, and what pieces of information in the documents should be removed. After revision and additional pre-piloting, the best-functioning tasks (i.e., those that elicit the intended types and ranges of student responses) are selected for full piloting.

During piloting, students complete both an operational task and one of the new tasks. At this point, draft scoring rubrics are revised and tested in grading the pilot responses, and final revisions are made to the tasks to ensure that the task is eliciting the types of responses intended.

Scoring Criteria Performance Task

D

Analytic Reasoning & Evaluation

Interpreting, analyzing, and evaluating the quality of information. This entails identifying information that is relevant to a problem, highlighting connected and conflicting information, detecting flaws in logic and questionable assumptions, and explaining why information is credible, unreliable, or limited.

Writing Effectiveness

Constructing organized and logically cohesive arguments. Strengthening the writer's position by providing elaboration on facts or ideas (e.g., explaining how evidence bears on the problem, providing examples, and emphasizing especially convincing evidence).

Writing Mechanics

Facility with the conventions of standard written English (agreement, tense, capitalization, punctuation, and spelling) and control of the English language, including syntax (sentence structure) and diction (word choice and usage).

Problem Solving

Considering and weighing information from discrete sources to make decisions (draw a conclusion and/or propose a course of action) that logically follow from valid arguments, evidence, and examples. Considering the implications of decisions and suggesting additional research when appropriate.

6

- Identifies most facts or ideas that support or refute all major arguments (or salient features of all objects to be classified) presented in the Document Library. Provides analysis that goes beyond the obvious.
- Demonstrates accurate understanding of a large body of information from the Document Library.
- Makes several accurate claims about the quality of information.

- Organizes response in a logically cohesive way that makes it very easy to follow the writer's arguments.
- Provides valid and comprehensive elaboration on facts or ideas related to each argument and clearly cites sources of information.

- Demonstrates outstanding control of grammatical conventions.
- Consistently writes well-constructed, complex sentences with varied structure and length.
- Displays adept use of vocabulary that is precise, advanced, and varied.

- Provides a decision and a solid rationale based on credible evidence from a variety of sources. Weighs other options, but presents the decision as best given the available evidence.

When applicable:

- Proposes a course of action that follows logically from the conclusion. Considers implications.
- Recognizes the need for additional research. Recommends specific research that would address most unanswered questions.

5

- Identifies several facts or ideas that support or refute all major arguments (or salient features of all objects to be classified) presented in the Document Library.
- Demonstrates accurate understanding of much of the Document Library content.
- Makes a few accurate claims about the quality of information.

- Organizes response in a logically cohesive way that makes it fairly easy to follow the writer's arguments.
- Provides valid elaboration on facts or ideas related to each argument and cites sources of information.

- Demonstrates very good control of grammatical conventions.
- Consistently writes well-constructed sentences with varied structure and length.
- Uses varied and sometimes advanced vocabulary that effectively communicates ideas.

- Provides a decision and a solid rationale based largely on credible evidence from multiple sources and discounts alternatives.

When applicable:

- Proposes a course of action that follows logically from the conclusion. May consider implications.
- Recognizes the need for additional research. Suggests research that would address some unanswered questions.

4

- Identifies a few facts or ideas that support or refute all major arguments (or salient features of all objects to be classified) presented in the Document Library.
- Briefly demonstrates accurate understanding of important Document Library content, but disregards some information.
- Makes very few accurate claims about the quality of information.

- Organizes response in a way that makes the writer's arguments and logic of those arguments apparent but not obvious.
- Provides valid elaboration on facts or ideas several times and cites sources of information.

- Demonstrates good control of grammatical conventions with few errors.
- Writes well-constructed sentences with some varied structure and length.
- Uses vocabulary that clearly communicates ideas but lacks variety.

- Provides a decision and credible evidence to back it up. Possibly does not account for credible, contradictory evidence. May attempt to discount alternatives.

When applicable:

- Proposes a course of action that follows logically from the conclusion. May briefly consider implications.
- Recognizes the need for additional research. Suggests research that would address an unanswered question.

3

- Identifies a few facts or ideas that support or refute several arguments (or salient features of all objects to be classified) presented in the Document Library.
- Disregards important information or makes minor misinterpretations of information. May restate information "as is."
- Rarely, if ever, makes claims about the quality of information and may present some unreliable evidence as credible.

- Provides limited or somewhat unclear arguments. Presents relevant information in each response, but that information is not woven into arguments.
- Provides elaboration on facts or ideas a few times, some of which is valid. Sources of information are sometimes unclear.

- Demonstrates fair control of grammatical conventions with frequent minor errors.
- Writes sentences that read naturally but tend to have similar structure and length.
- Uses vocabulary that communicates ideas adequately but lacks variety.

- Provides or implies a decision and some reason to favor it, but the rationale may be contradicted by unaccounted for evidence.

When applicable:

- Briefly proposes a course of action, but some aspects may not follow logically from the conclusion.
- May recognize the need for additional research. Any suggested research tends to be vague or would not adequately address unanswered questions.

2

- Identifies very few facts or ideas that support or refute arguments (or salient features of all objects to be classified) presented in the Document Library.
- Disregards or misinterprets much of the Document Library. May restate information "as is."
- Does not make claims about the quality of information and presents some unreliable information as credible.

- Provides limited, invalid, overstated, or very unclear arguments. May present information in a disorganized fashion or undermine own points.
- Any elaboration on facts or ideas tends to be vague, irrelevant, inaccurate, or unreliable (e.g., based entirely on writer's opinion). Sources of information are often unclear.

- Demonstrates poor control of grammatical conventions with frequent minor errors and some distracting errors.
- Consistently writes sentences with similar structure and length, and some may be difficult to understand.
- Uses simple vocabulary, and some vocabulary may be used inaccurately or in a way that makes meaning unclear.

- Provides or implies a decision, but very little rationale is provided or it is based heavily on unreliable evidence.

When applicable:

- Briefly proposes a course of action, but some aspects do not follow logically from the conclusion.
- May recognize the need for additional research. Any suggested research is vague or would not adequately address unanswered questions.

1

- Does not identify facts or ideas that support or refute arguments (or salient features of all objects to be classified) presented in the Document Library or provides no evidence of analysis.
- Disregards or severely misinterprets important information.
- Does not make claims about the quality of evidence and bases response on unreliable information.

- Does not develop convincing arguments. Writing may be disorganized and confusing.
- Does not provide elaboration on facts or ideas.

- Demonstrates minimal control of grammatical conventions with many errors that make the response difficult to read or provides insufficient evidence to judge.
- Writes sentences that are repetitive or incomplete, and some are difficult to understand.
- Uses simple vocabulary, and some vocabulary is used inaccurately or in a way that makes meaning unclear.

- Provides no clear decision or no valid rationale for the decision.

When applicable:

- Does not propose a course of action that follows logically from the conclusion.
- Does not recognize the need for additional research or does not suggest research that would address unanswered questions.

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Analytic Reasoning & Evaluation

Stating a position, providing valid reasons to support the writer's position, and demonstrating an understanding of the complexity of the issue by considering and possibly refuting alternative viewpoints.

Writing Effectiveness

Constructing an organized and logically cohesive argument. Strengthening the writer's position by elaborating on the reasons for that position (e.g., providing evidence, examples, and logical reasoning).

Writing Mechanics

Facility with the conventions of standard written English (agreement, tense, capitalization, punctuation, and spelling) and control of the English language, including syntax (sentence structure) and diction (word choice and usage).

6	<ul style="list-style-type: none"> Asserts an insightful position and provides multiple (at least four) sound reasons to justify it. Provides analysis that reflects a thorough consideration of the complexity of the issue. Possibly refutes major counterarguments or considers contexts integral to the issue (e.g., ethical, cultural, social, political). 	<ul style="list-style-type: none"> Organizes response in a logically cohesive way that makes it very easy to follow the writer's argument. Provides valid and comprehensive elaboration on each reason for the writer's position. 	<ul style="list-style-type: none"> Demonstrates outstanding control of grammatical conventions. Consistently writes well-constructed, complex sentences with varied structure and length. Displays adept use of vocabulary that is precise, advanced, and varied.
5	<ul style="list-style-type: none"> States a thoughtful position and provides multiple (at least three) sound reasons to support it. Provides analysis that reflects some consideration of the complexity of the issue. Possibly considers contexts integral to the issue (e.g., ethical, cultural, social, political). 	<ul style="list-style-type: none"> Organizes response in a logically cohesive way that makes it fairly easy to follow the writer's argument. Provides valid elaboration on each reason for the writer's position. 	<ul style="list-style-type: none"> Demonstrates very good control of grammatical conventions. Consistently writes well-constructed sentences with varied structure and length. Uses varied and sometimes advanced vocabulary that effectively communicates ideas.
4	<ul style="list-style-type: none"> States a clear position and some (two to three) sound reasons to support it. Provides some careful analysis, but it lacks consideration of the issue's complexity. 	<ul style="list-style-type: none"> Organizes response in a way that makes the writer's argument and its logic apparent but not obvious. Provides valid elaboration on reasons for the writer's position several times. 	<ul style="list-style-type: none"> Demonstrates good control of grammatical conventions with few errors. Writes well-constructed sentences with some varied structure and length. Uses vocabulary that clearly communicates ideas but lacks variety.
3	<ul style="list-style-type: none"> States or implies a position and provides few (one to two) reasons to support it. Provides some superficial analysis of the issue. 	<ul style="list-style-type: none"> Provides a limited or somewhat unclear argument. Presents relevant information, but that information is not woven into an argument. Provides valid elaboration on reasons for the writer's position a few times. 	<ul style="list-style-type: none"> Demonstrates fair control of grammatical conventions with frequent minor errors. Writes sentences that read naturally but tend to have similar structure and length. Uses vocabulary that communicates ideas adequately but lacks variety.
2	<ul style="list-style-type: none"> States or implies a position and provides vague or very few reasons to support it. Provides little analysis, and that analysis may reflect an oversimplification of the issue. 	<ul style="list-style-type: none"> Provides limited, invalid, overstated, or very unclear argument. May present information in a disorganized fashion or undermine own points. Any elaboration on reasons for the writer's position tend to be vague, irrelevant, inaccurate, or unreliable (e.g., based entirely on writer's opinion). 	<ul style="list-style-type: none"> Demonstrates poor control of grammatical conventions with frequent minor errors and some distracting errors. Consistently writes sentences with similar structure and length, and some may be difficult to understand. Uses simple vocabulary, and some vocabulary may be used inaccurately or in a way that makes meaning unclear.
1	<ul style="list-style-type: none"> States an unclear position (if any) and fails to provide reasons to support it. Provides very little evidence of analysis. May not understand the issue. 	<ul style="list-style-type: none"> Fails to develop a convincing argument. The writing may be disorganized and confusing. Fails to provide elaboration on reasons for the writer's position. 	<ul style="list-style-type: none"> Demonstrates minimal control of grammatical conventions with many errors that make the response difficult to read or provides insufficient evidence to judge. Writes sentences that are repetitive or incomplete, and some are difficult to understand. Uses simple vocabulary, and some vocabulary is used inaccurately or in a way that makes meaning unclear.

	Analytic Reasoning & Evaluation Interpreting, analyzing, and evaluating the quality of information. This entails highlighting conflicting information, detecting flaws in logic and questionable assumptions, and explaining why information is credible, unreliable, or limited.	Writing Effectiveness Constructing organized and logically cohesive arguments. Strengthening the writer's position by elaborating on deficiencies in the argument (e.g., providing explanations and examples).	Writing Mechanics Facility with the conventions of standard written English (agreement, tense, capitalization, punctuation, and spelling) and control of the English language, including syntax (sentence structure) and diction (word choice and usage).
6	<ul style="list-style-type: none"> • Demonstrates accurate understanding of the complete argument. • Identifies many (at least five) deficiencies in the argument and provides analysis that goes beyond the obvious. 	<ul style="list-style-type: none"> • Organizes response in a logically cohesive way that makes it very easy to follow the writer's critique. • Provides valid and comprehensive elaboration for each identified deficiency. 	<ul style="list-style-type: none"> • Demonstrates outstanding control of grammatical conventions. • Consistently writes well-constructed, complex sentences with varied structure and length. • Displays adept use of vocabulary that is precise, advanced, and varied.
5	<ul style="list-style-type: none"> • Demonstrates accurate understanding of much of the argument. • Identifies many (at least four) deficiencies in the argument. 	<ul style="list-style-type: none"> • Organizes response in a logically cohesive way that makes it fairly easy to follow the writer's critique. • Provides valid elaboration for each identified deficiency. 	<ul style="list-style-type: none"> • Demonstrates very good control of grammatical conventions. • Consistently writes well-constructed sentences with varied structure and length. • Uses varied and sometimes advanced vocabulary that effectively communicates ideas.
4	<ul style="list-style-type: none"> • Demonstrates accurate understanding of several aspects of the argument, but disregards a few. • Identifies several (at least three) deficiencies in the argument. 	<ul style="list-style-type: none"> • Organizes response in a way that makes the writer's critique and its logic apparent but not obvious. • Provides valid elaboration on identified deficiencies several times. 	<ul style="list-style-type: none"> • Demonstrates good control of grammatical conventions with few errors. • Writes well-constructed sentences with some varied structure and length. • Uses vocabulary that clearly communicates ideas but lacks variety.
3	<ul style="list-style-type: none"> • Disregards several aspects of the argument or makes minor misinterpretations of the argument. • Identifies a few (two to three) deficiencies in the argument. 	<ul style="list-style-type: none"> • Provides a limited or somewhat unclear critique. Presents relevant information, but that information is not woven into an argument. • Provides valid elaboration on identified deficiencies a few times. 	<ul style="list-style-type: none"> • Demonstrates fair control of grammatical conventions with frequent minor errors. • Writes sentences that read naturally but tend to have similar structure and length. • Uses vocabulary that communicates ideas adequately but lacks variety.
2	<ul style="list-style-type: none"> • Disregards or misinterprets much of the information in the argument. • Identifies very few (one to two) deficiencies in the argument and may accept unreliable evidence as credible. 	<ul style="list-style-type: none"> • Provides limited, invalid, overstated, or very unclear critique. May present information in a disorganized fashion or undermine own points. • Any elaboration on identified deficiencies tends to be vague, irrelevant, inaccurate, or unreliable (e.g., based entirely on writer's opinion). 	<ul style="list-style-type: none"> • Demonstrates poor control of grammatical conventions with frequent minor errors and some distracting errors. • Consistently writes sentences with similar structure and length, and some may be difficult to understand. • Uses simple vocabulary, and some vocabulary may be used inaccurately or in a way that makes meaning unclear.
1	<ul style="list-style-type: none"> • Disregards or severely misinterprets important information in the argument. • Fails to identify deficiencies in the argument or provides no evidence of critical analysis. 	<ul style="list-style-type: none"> • Fails to develop a convincing critique or agrees entirely with the flawed argument. The writing may be disorganized and confusing. • Fails to provide elaboration on identified deficiencies. 	<ul style="list-style-type: none"> • Demonstrates minimal control of grammatical conventions with many errors that make the response difficult to read or provides insufficient evidence to judge. • Writes sentences that are repetitive or incomplete, and some are difficult to understand. • Uses simple vocabulary, and some vocabulary is used inaccurately or in a way that makes meaning unclear.

Scoring CLA Responses

The CLA uses a combination of automated and human scoring. Since fall 2010, we have relied primarily on Intelligent Essay Assessor (IEA) for scoring. IEA is the automated scoring engine developed by Pearson Knowledge Technologies to evaluate the meaning of text, not just writing mechanics. Pearson has trained IEA for the CLA using a broad range of real CLA responses and scores to ensure its consistency with scores generated by human scorers.

Though the majority of scoring is handled by IEA, some responses are scored by trained human scorers. IEA identifies unusual responses, which are automatically sent to the human scoring queue. In addition, ten percent of responses are scored by both IEA and humans in order to continually evaluate the quality of scoring.

All scorer candidates undergo rigorous training in order to become certified

CLA scorers. Training includes an orientation to the prompts and scoring rubrics/guides, repeated practice grading a wide range of student responses, and extensive feedback and discussion after scoring each response. To ensure continuous human scorer calibration, CAE developed the E-Verification system for the online Scoring Interface. The E-Verification system was developed to improve and streamline scoring. Calibration of scorers through the E-Verification system requires scorers to score previously-scored results or “Verification Papers”^{*} when they first start scoring, as well as throughout the scoring window. The system will periodically present Verification Papers to scorers, though the scorers are not alerted to the Verification Papers. The system does not indicate when a scorer has successfully scored a Verification Paper, but if the scorer fails to accurately score a series of Verification Papers, he or she will be removed from scoring and must

participate in a remediation process.

At this point, scorers are either further coached or removed from scoring.

Each response receives subscores in the categories of Analytic Reasoning and Evaluation, Writing Effectiveness, and Writing Mechanics. An additional scale, Problem Solving, is used to evaluate only the Performance Tasks. Subscores are assigned on a scale of 1 (lowest) to 6 (highest). For all task types, blank responses or responses that are entirely unrelated to the task (e.g., writing about what they had for breakfast) are flagged for removal from results.

Because the prompts (specific tasks within each task type) differ in the possible arguments and pieces of information students can or should use in their responses, prompt-specific guidance is provided to scorers in addition to the scoring criteria that appear in the previous section.

^{*} The Verification Papers were drawn from responses collected during the 2010-2011 administration that were scored by both human scorers and the automated scoring engine. Each Verification Paper and its scores were reviewed by a lead scorer prior to being designated as a Verification Paper.

Scaling EAA Scores

To facilitate reporting results across schools, ACT scores are converted (using the ACT-SAT crosswalk to the right) to the scale of measurement used to report SAT scores.

For institutions where a majority of students did not have ACT or SAT scores (e.g., two-year institutions and open admission schools), we make available the Scholastic Level Exam (SLE), a short-form cognitive ability measure, as part of the CLA. The SLE is produced by Wonderlic, Inc. SLE scores are converted to SAT scores using data from 1,148 students participating in spring 2006 that had both SAT and SLE scores.

These converted scores (both ACT to SAT and SLE to SAT) are referred to simply as entering academic ability (EAA) scores.

Standard ACT to SAT Crosswalk

ACT	to	SAT
36		1600
35		1560
34		1510
33		1460
32		1420
31		1380
30		1340
29		1300
28		1260
27		1220
26		1190
25		1150
24		1110
23		1070
22		1030
21		990
20		950
19		910
18		870
17		830
16		790
15		740
14		690
13		640
12		590
11		530

Source:

ACT (2008). *ACT/College Board Joint Statement*. Retrieved from <http://www.act.org/aap/concordance/pdf/report.pdf>

Converting Scores to a Common Scale

For each task, raw subscores are summed to produce a raw total score. Because not all tasks have the exact same level of difficulty, raw total scores from the different tasks are converted to a common scale of measurement. This process results in scale scores that reflect comparable levels of proficiency across tasks. For example, a given CLA scale score indicates approximately the same percentile rank regardless of the task on which it was earned. This feature of the CLA scale score allows combining scores from different tasks to compute a school's mean scale score for each task type as well as a total average scale score across types.

A linear scale transformation is used to convert raw scores to scale scores. This process results in a scale score distribution with the same mean and standard deviation as the SAT (or converted ACT) scores of the college freshmen who took that measure. This type of scaling preserves the shape of the raw score distribution and maintains the relative standing of students. For

example, the student with the highest raw score on a task will also have the highest scale score on that task, the student with the next highest raw score will be assigned the next highest scale score, and so on.

This type of scaling makes it such that a very high raw score earned on the task (not necessarily the highest possible score) corresponds approximately to the highest SAT (or converted ACT) score of any freshman who took that task.

Similarly, a very low raw score earned on a task would be assigned a scale score value that is close to the lowest SAT (or converted ACT) score of any freshman who took that task. On rare occasions that students achieve exceptionally high or low raw scores, this scaling procedure may produce scale scores that fall outside the normal SAT (Math + Critical Reading) score range of 400 to 1600.

From fall 2006 to spring 2010, CAE used the same scaling equations for each assessment cycle in order to

facilitate year-to-year comparisons.

With the introduction of new scoring criteria in fall 2010, raw scores are now on a different scale than they were in previous years, which makes it necessary to revise the scaling equations. Under the new scaling equations, fall 2010 responses tend to receive somewhat lower scores than responses of the same quality would have received in previous years. If you are interested in drawing comparisons between the average CLA scale scores in your current institutional report and those reported prior to fall 2010, we encourage you to use the equation below to convert pre-fall 2010 scale scores to current scale scores. The correlation between institution average scores on the old and new score scales is .99, and this equation characterizes the strong linear relationship between those scores. The equation can apply to all institution-level score types: Total, Performance Task, Analytic Writing Task, Make-an-Argument, and Critique-an-Argument.

$$score_{\text{new}} = 102.29 + (0.8494 \cdot score_{\text{old}})$$

Modeling Student-Level Scores

Within each school, an equation like the following is used to model the relationship between senior students' EAA scores and their CLA scores:

$$CLA_{ij} = \overline{CLA}_j + 0.43(EAA_{ij} - \overline{EAA}_j) + r_{ij}$$

(Note that coefficients are for illustrative purposes only; see p. 35 for the coefficients used in this year's analysis.)

In this equation, CLA_{ij} is student i in school j 's CLA score, and this is modeled as a function of school j 's average senior CLA score (\overline{CLA}_j) and student i 's EAA score (EAA_{ij}) minus the average EAA score of participating

seniors at school j . Specifically, a student's CLA score equals (a) the school's average senior CLA score plus (b) an adjustment based on the student's EAA score relative to the average among senior participants in school j and (c) a residual term r_{ij} equal to the difference between a student's observed and expected CLA performance, with positive numbers meaning "better than expected." Here, the student-level slope coefficient for EAA is 0.43, which indicates that for every 1 point difference in EAA, one would expect a 0.43 point difference in CLA performance. To illustrate the use of this equation for computing a

student's expected CLA score, consider a school with an average senior CLA score of 1200 and an average EAA score of 1130. A senior student in this school with an EAA score of 1080 would be expected to have a CLA score of $1200 + 0.43(1080 - 1130) = 1179$. If this student actually scored a 1210 on the CLA, the residual term r_{ij} would be +31 because this student scored 31 points higher than one would expect given his or her EAA. Using the equation described here would produce student-level deviation scores that differ slightly from those that inform the performance levels reported in your Student Data File.

Modeling School-Level Scores

Institutional value-added scores are derived from the school-level equation of the HLM, which takes the form

$$\overline{CLA}_j = 355 + 0.32(\overline{EAA}_j) + 0.45(\overline{CLA}_{fr,j}) + u_j$$

where $\overline{CLA}_{fr,j}$ is the average CLA score of participating freshmen at school j , and u_j is that school's value-added score estimate (\overline{CLA}_j and \overline{EAA}_j are defined the same as in the student-level equation). Specifically, u_j is the

difference between a school's observed and expected average senior CLA performance. In this equation, 355 is the school-level intercept, 0.32 is the school-level slope coefficient for average EAA, and 0.45 is the school-level slope coefficient for average freshman CLA. Combined with average EAA and average freshman CLA scores, these coefficients allow for computing expected senior average CLA scores.

It may seem unconventional to use the average freshman CLA score from a different group of students as a predictor of the average senior CLA score, but analyses of CLA data consistently indicate that average freshman CLA performance adds significantly to the model. That is, average EAA and average freshman CLA account for different but nevertheless important characteristics of students as they enter college. Moreover,

this model would not be credible as a value-added model for CLA scores if there was no control for CLA performance at the start of college.

As a conceptual illustration of this approach, consider several schools administering the CLA to groups of seniors that had similar academic skills upon entering college—as indicated by average SAT or ACT scores and average freshman CLA scores. If, at the time of graduation, average CLA performance at one school is greater than average performance at the other schools testing groups of students with similar entering characteristics, one can infer that greater gains in critical thinking and written communication skills occurred at this school. That is, this school has greater value added than the other schools.

To illustrate the use of the school-level equation for estimating value-added scores, consider a school with an average freshman CLA score of 1050, an average senior CLA score of 1200,

and an average senior EAA score of 1130. According to the school-level equation, one would expect the senior average CLA performance at this school to be $355 + 0.32(1130) + 0.45(1050) = 1189$. The observed senior average CLA performance was 1200, which is 11 points higher than the typical school testing students with similar EAA and freshman CLA scores. Converted to a standard scale, the value-added score would be 0.28, which would place the school in the “Near Expected” performance category of value added.

Value-added scores are properly interpreted as senior average CLA performance relative to the typical school testing students with similar academic skills upon entering college. The proper conditional interpretation of value-added scores is essential.

First, it underscores the major goal of value-added modeling: obtaining a benchmark for performance based on schools admitting similar students. Secondly, a high value-added score

does not necessarily indicate high absolute performance on the CLA. Schools with low absolute CLA performance may obtain high value-added scores by performing well relative to expected (i.e., relative to the typical school testing students with similar academic skills upon entering college). Likewise, schools with high absolute CLA performance may obtain low value-added scores by performing poorly relative to expected. Though it is technically acceptable to interpret value-added scores as relative to all other schools participating in the CLA after controlling for entering student characteristics, this is not the preferred interpretation because it encourages comparisons among disparate institutions.

Interpreting Confidence Intervals

It is important to keep in mind that value-added scores are estimates of unknown quantities. Put another way, the value-added score each school receives is a “best guess” based on the available information. Given their inherent uncertainty, value-added scores must be interpreted in light of available information about their precision. HLM estimation (described in the *Methods* section of this report) provides standard errors for value-added scores, which can be used to compute a unique 95% confidence interval for each school. These standard errors reflect within- and between-school variation in CLA and EAA scores, and they are most strongly related to senior sample size. Schools testing larger samples of seniors obtain more precise estimates of value added and therefore have smaller standard errors and corresponding 95% confidence intervals.

With a senior sample size near 100, our example school has a standard error of 0.35 (on the standardized value-added score scale). This school’s 95% confidence interval has a range from -0.41 to 0.97, which was calculated as the value-added estimate plus or minus 1.96 multiplied by the standard error.

To provide some perspective, consider that the confidence interval would have been about 30% larger (from -0.60 to 1.16) if this school tested half as many students. If this school tested twice as many students, the confidence interval would have been about 20% smaller (from -0.26 to 0.83).

Unfortunately, inaccurate interpretations of confidence intervals are common. It is *not* correct to say that “there is a 95% chance that my school’s ‘true’ value-added score is somewhere between -0.41 and 0.97” because it is either in the interval or it is not in the interval. Unfortunately, we cannot know which. The confidence interval reflects uncertainty in the estimate of the true score (due to sampling variation), not uncertainty in the true score itself. Correctly interpreted, a 95% confidence interval indicates the variation in value-added scores we should expect if testing were repeated with different samples of students a large number of times. It may be stated that, “if testing were repeated 100 times with different samples of students, about 95 out of the 100 resulting confidence intervals would include my school’s ‘true’ value-added score.”

Using conventional rules for judging statistical significance, one could draw several inferences from this school’s 95% confidence interval. First, it can be said that this school’s value-added score is significantly different from value-added scores lower than -0.41 and greater than 0.97. Second, because 0 is within the range of the 95% confidence interval, it may be said that this school’s value-added score is not significantly different from 0. Note that a value-added score of 0 does *not* indicate zero learning; it instead indicates typical (or “near expected”) senior average CLA performance, which implies learning typical of schools testing students with similar academic skills upon entering college.

Statistical Specification of the CLA Value-Added Model

Level 1 (Student Level): $CLA_{ij} = \beta_{0j} + \beta_{1j}(EAA_{ij} - \overline{EAA}_j) + r_{ij}$

- CLA_{ij} is the CLA score of student i at school j .
- EAA_{ij} is the Entering Academic Ability score of student i at school j .
- \overline{EAA}_j is the mean EAA score at school j .
- β_{0j} is the student-level intercept (equal to the mean CLA score at school j).
- β_{1j} is the student-level slope coefficient for EAA at school j (assumed to be the same across schools).
- r_{ij} is the residual for student i in school j , where $r_{ij} \sim N(0, \sigma^2)$ and σ^2 is the variance of the student-level residuals (the pooled within-school variance of CLA scores after controlling for EAA).

Level 2 (School Level): $\beta_{0j} = \gamma_{00} + \gamma_{01}(\overline{EAA}_j) + \gamma_{02}(\overline{CLA}_{fr,j}) + u_{0j}$ and $\beta_{1j} = \gamma_{10}$

- $\overline{CLA}_{fr,j}$ is the mean freshman CLA score at school j .
- γ_{00} is the school-level value-added equation intercept.
- γ_{01} is the school-level value-added equation slope coefficient for senior mean EAA.
- γ_{02} is the school-level value-added equation slope coefficient for freshman mean CLA.
- γ_{10} is the student-level slope coefficient for EAA (assumed to be the same across schools).
- u_{0j} is the value-added equation residual for school j (i.e., the value-added score), where $u_{0j} \sim N\left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} \tau_{00} & 0 \\ 0 & 0 \end{bmatrix}\right)$ and τ_{00} is the variance of the school-level residuals (the variance in mean CLA scores after controlling for mean EAA and mean freshman CLA scores).

Mixed Model (combining the school- and student-level equations):

$$CLA_{ij} = \gamma_{00} + \gamma_{01}(\overline{EAA}_j) + \gamma_{02}(\overline{CLA}_{fr,j}) + \gamma_{10}(EAA_{ij} - \overline{EAA}_j) + u_{0j} + r_{ij}$$

Estimated Parameters for Value-Added Model

	γ_{00}	γ_{10}	γ_{01}	γ_{02}	Standard Deviation
Total Score	416.91	0.41	0.37	0.34	52.16
Performance Task	417.91	0.46	0.37	0.33	65.73
Analytic Writing Task	435.63	0.36	0.38	0.31	50.63
Make-an-Argument	403.84	0.37	0.36	0.34	49.93
Critique-an-Argument	446.62	0.36	0.38	0.31	61.18

The table above shows the estimated parameters for the value-added model. Using these estimated parameters and the instructions below (also described in the statistical models on the previous page), one can compute the expected senior CLA score for a given school. In combination with the observed mean score for seniors at that school, this can be used to compute the school's value-added score. These values can also be used to perform subgroup analyses.

How to Calculate CLA Value-Added Scores

To calculate value-added scores for subgroups of students, you need:

- Samples of entering and exiting students with CLA and EAA scores (see your CLA Student Data File)
 - The estimated parameters for the value-added model (see table above)
1. Refer to your CLA Student Data File to identify your subgroup sample of interest. The subgroup must contain freshmen and seniors with CLA scores (Performance Task or Analytic Writing Task) and EAA scores (entering academic ability).
 2. Using your CLA Student Data File, compute:
 - The mean EAA score of seniors (exiting students) in the sample
 - The mean CLA score of freshmen (entering students) in the sample
 - The mean CLA score of seniors (exiting students) in the sample
 3. Calculate the senior subgroup sample's expected mean CLA score, using the parameters from the table above. Please note that the same equation can be used for individual task types, as well as for the total CLA score. Simply replace any "total score" parameters with those from the appropriate task type row in the table above.
 - The expected senior mean CLA score = $\gamma_{00} + \gamma_{01} \cdot (\text{senior mean EAA}) + \gamma_{02} \cdot (\text{freshman mean CLA})$
 4. Use your expected score to calculate your subgroup sample's value-added score in standard deviation units:
 - Value-added score =
$$\frac{(\text{observed senior mean CLA score}) - (\text{expected senior mean CLA score})}{\text{standard deviation}}$$

Freshman CLA Scores, 50th-99th Percentiles

Percentile	Total CLA Score	Performance Task	Analytic Writing Task	Make-an-Argument	Critique-an-Argument	EAA
99	1288	1300	1275	1272	1272	1444
98	1258	1285	1228	1231	1222	1288
97	1217	1275	1220	1230	1220	1285
96	1211	1229	1202	1201	1209	1250
95	1203	1202	1200	1196	1206	1247
94	1193	1196	1193	1193	1201	1238
93	1192	1192	1192	1189	1195	1221
92	1191	1190	1191	1184	1190	1208
91	1186	1183	1188	1183	1185	1203
90	1165	1161	1169	1175	1176	1196
89	1161	1159	1163	1165	1172	1184
88	1154	1158	1159	1162	1167	1169
87	1153	1156	1154	1159	1164	1166
86	1152	1153	1153	1157	1163	1155
85	1150	1146	1145	1150	1157	1152
84	1146	1143	1144	1149	1152	1146
83	1141	1136	1141	1145	1146	1144
82	1134	1132	1140	1142	1142	1138
81	1132	1125	1139	1136	1140	1136
80	1128	1124	1136	1133	1134	1135
79	1126	1123	1132	1125	1129	1130
78	1124	1122	1131	1123	1125	1127
77	1120	1115	1124	1117	1120	1121
76	1116	1113	1120	1115	1112	1116
75	1115	1111	1114	1114	1109	1114
74	1111	1109	1110	1113	1108	1112
73	1107	1102	1110	1112	1107	1110
72	1099	1097	1109	1110	1104	1108
71	1094	1092	1107	1109	1099	1105
70	1093	1091	1105	1108	1097	1104
69	1092	1090	1104	1106	1094	1100
68	1092	1088	1102	1105	1093	1096
67	1091	1087	1102	1105	1090	1095
66	1088	1085	1101	1104	1088	1093
65	1086	1083	1097	1101	1087	1090
64	1083	1082	1092	1098	1085	1084
63	1082	1080	1091	1096	1084	1083
62	1081	1077	1090	1094	1082	1082
61	1080	1072	1088	1093	1082	1081
60	1079	1071	1084	1092	1081	1077
59	1078	1069	1083	1091	1080	1075
58	1074	1068	1081	1085	1079	1064
57	1070	1063	1078	1075	1077	1060
56	1068	1061	1077	1075	1075	1056
55	1066	1058	1074	1074	1073	1051
54	1065	1057	1072	1073	1070	1047
53	1065	1056	1069	1068	1067	1041
52	1064	1055	1068	1067	1066	1040
51	1060	1053	1067	1066	1060	1037
50	1058	1052	1065	1065	1058	1036

Freshman CLA Scores, 1st-49th Percentiles

Percentile	Total CLA Score	Performance Task	Analytic Writing Task	Make-an-Argument	Critique-an-Argument	EAA
49	1052	1050	1064	1064	1055	1028
48	1050	1043	1060	1062	1053	1021
47	1044	1042	1057	1056	1053	1019
46	1044	1041	1055	1053	1052	1017
45	1043	1039	1054	1051	1048	1016
44	1043	1037	1050	1050	1047	1016
43	1042	1035	1046	1049	1045	1015
42	1041	1032	1040	1045	1040	1010
41	1038	1031	1034	1039	1035	1010
40	1032	1028	1033	1037	1031	1009
39	1031	1023	1031	1036	1030	1008
38	1026	1021	1030	1035	1022	1003
37	1025	1020	1025	1034	1020	1002
36	1023	1017	1023	1033	1016	997
35	1022	1016	1022	1030	1015	996
34	1019	1014	1022	1028	1010	991
33	1018	1012	1021	1026	1009	987
32	1016	1007	1015	1015	1005	983
31	1012	1004	1013	1014	999	981
30	1009	1000	1011	1013	998	979
29	1003	999	1009	1012	997	977
28	1000	998	1003	1011	996	975
27	994	995	1002	1010	993	974
26	990	993	998	1008	992	968
25	985	987	997	1006	985	962
24	984	981	996	1005	982	961
23	983	975	994	1003	981	958
22	982	973	992	1000	978	957
21	980	970	988	997	976	953
20	978	969	987	994	975	949
19	974	962	984	989	974	932
18	970	959	983	985	968	931
17	967	952	975	978	966	924
16	965	950	973	972	962	914
15	956	943	969	961	958	911
14	951	941	961	950	953	909
13	949	938	957	948	951	908
12	943	928	949	942	950	907
11	942	926	944	940	943	904
10	930	922	940	920	937	902
9	928	916	934	917	934	898
8	920	911	924	907	927	881
7	919	904	924	904	926	880
6	916	878	923	900	925	858
5	908	876	920	898	920	855
4	900	844	905	896	904	834
3	884	841	895	886	896	833
2	845	831	846	840	836	793
1	806	792	823	793	815	718

H.3

Senior CLA Scores, 50th-99th Percentiles

Percentile	Total CLA Score	Performance Task	Analytic Writing Task	Make-an-Argument	Critique-an-Argument	EAA
99	1332	1368	1329	1311	1373	1454
98	1319	1341	1321	1303	1348	1294
97	1318	1339	1314	1293	1343	1288
96	1314	1324	1313	1289	1336	1261
95	1310	1317	1305	1279	1335	1258
94	1303	1303	1296	1272	1319	1236
93	1284	1294	1293	1269	1311	1234
92	1281	1289	1288	1260	1305	1216
91	1277	1288	1278	1255	1296	1206
90	1271	1280	1273	1253	1292	1202
89	1260	1272	1264	1251	1288	1193
88	1259	1266	1262	1249	1287	1188
87	1255	1260	1259	1236	1280	1186
86	1253	1257	1256	1235	1276	1178
85	1250	1254	1251	1229	1271	1173
84	1245	1250	1250	1227	1268	1165
83	1241	1249	1245	1220	1265	1163
82	1235	1247	1239	1218	1261	1157
81	1234	1244	1237	1214	1260	1156
80	1230	1243	1226	1212	1256	1150
79	1229	1238	1225	1208	1254	1148
78	1227	1230	1220	1205	1249	1146
77	1224	1225	1217	1201	1247	1142
76	1223	1223	1214	1198	1239	1129
75	1220	1222	1210	1197	1234	1127
74	1218	1221	1209	1194	1231	1122
73	1216	1215	1204	1192	1221	1120
72	1204	1213	1200	1191	1220	1119
71	1203	1210	1199	1189	1219	1114
70	1202	1210	1197	1185	1217	1113
69	1199	1209	1195	1184	1215	1108
68	1198	1207	1192	1181	1213	1107
67	1197	1201	1190	1175	1206	1100
66	1194	1198	1188	1173	1203	1095
65	1193	1197	1188	1171	1202	1094
64	1189	1186	1187	1170	1201	1085
63	1186	1184	1186	1168	1198	1084
62	1181	1183	1184	1163	1197	1083
61	1178	1182	1183	1162	1195	1082
60	1177	1180	1182	1161	1193	1080
59	1175	1179	1179	1159	1192	1080
58	1174	1177	1173	1156	1191	1079
57	1174	1176	1172	1152	1189	1077
56	1173	1174	1169	1152	1188	1076
55	1169	1173	1166	1151	1185	1068
54	1167	1171	1165	1150	1183	1063
53	1165	1168	1165	1149	1181	1062
52	1164	1163	1164	1148	1180	1061
51	1162	1162	1163	1147	1178	1057
50	1159	1161	1162	1146	1177	1056

Senior CLA Scores, 1st-49th Percentiles

Percentile	Total CLA Score	Performance Task	Analytic Writing Task	Make-an-Argument	Critique-an-Argument	EAA
49	1157	1159	1161	1142	1175	1055
48	1155	1158	1160	1141	1174	1053
47	1155	1157	1157	1140	1173	1052
46	1154	1157	1155	1139	1169	1040
45	1152	1156	1153	1139	1167	1039
44	1150	1151	1153	1138	1167	1038
43	1148	1151	1152	1136	1166	1034
42	1147	1150	1151	1135	1163	1034
41	1144	1149	1149	1132	1161	1033
40	1143	1148	1146	1130	1159	1032
39	1142	1146	1145	1129	1156	1030
38	1140	1143	1142	1128	1154	1025
37	1139	1137	1140	1126	1153	1024
36	1138	1136	1139	1125	1152	1023
35	1137	1135	1135	1123	1152	1022
34	1137	1134	1134	1118	1151	1020
33	1136	1133	1132	1116	1149	1011
32	1135	1132	1131	1114	1145	1010
31	1135	1129	1128	1111	1141	1009
30	1134	1128	1127	1108	1140	1008
29	1131	1127	1125	1105	1136	1007
28	1130	1125	1121	1100	1135	1005
27	1127	1122	1121	1097	1133	998
26	1126	1120	1120	1095	1131	995
25	1123	1118	1119	1094	1130	993
24	1122	1114	1115	1089	1129	989
23	1120	1113	1114	1087	1123	987
22	1117	1112	1112	1083	1121	980
21	1116	1109	1111	1080	1117	974
20	1112	1108	1108	1077	1116	973
19	1108	1107	1102	1075	1115	969
18	1103	1106	1097	1074	1110	967
17	1099	1101	1096	1073	1107	965
16	1095	1092	1094	1072	1103	962
15	1081	1088	1090	1070	1099	951
14	1077	1080	1086	1069	1095	949
13	1073	1071	1083	1067	1088	941
12	1072	1064	1082	1064	1081	936
11	1067	1045	1069	1059	1074	931
10	1060	1030	1056	1056	1068	931
9	1039	1027	1055	1049	1053	930
8	1024	1016	1053	1037	1049	925
7	1021	1002	1052	1032	1044	923
6	1009	990	1042	1019	1031	911
5	1000	983	1033	999	1028	880
4	988	974	1000	968	993	869
3	964	961	985	957	981	868
2	957	929	929	893	951	857
1	917	789	904	858	925	841

Value-Added Scores, 50th-99th Percentiles

Percentile	Total CLA Score	Performance Task	Analytic Writing Task	Make-an-Argument	Critique-an-Argument
99	2.84	2.68	3.10	2.74	4.03
98	2.24	1.88	2.40	1.94	2.80
97	2.08	1.73	2.33	1.91	2.51
96	1.66	1.59	1.94	1.73	1.97
95	1.63	1.50	1.82	1.50	1.84
94	1.47	1.44	1.59	1.47	1.67
93	1.34	1.34	1.55	1.44	1.56
92	1.16	1.19	1.40	1.36	1.40
91	1.16	1.14	1.40	1.17	1.39
90	1.04	0.97	1.26	1.11	1.33
89	1.03	0.97	1.16	1.08	1.26
88	1.01	0.86	1.12	1.05	1.22
87	1.00	0.86	1.10	1.04	1.03
86	0.96	0.84	1.07	1.03	1.03
85	0.89	0.79	1.04	1.01	0.99
84	0.83	0.75	1.03	0.98	0.92
83	0.81	0.75	0.96	0.96	0.91
82	0.81	0.72	0.94	0.92	0.85
81	0.78	0.71	0.91	0.89	0.82
80	0.74	0.67	0.89	0.86	0.81
79	0.72	0.63	0.81	0.80	0.73
78	0.72	0.62	0.79	0.80	0.70
77	0.69	0.62	0.77	0.74	0.65
76	0.69	0.56	0.70	0.74	0.60
75	0.67	0.52	0.66	0.70	0.54
74	0.66	0.51	0.66	0.69	0.53
73	0.63	0.51	0.64	0.68	0.52
72	0.60	0.50	0.55	0.66	0.52
71	0.59	0.49	0.50	0.60	0.48
70	0.54	0.46	0.50	0.60	0.48
69	0.52	0.44	0.43	0.57	0.38
68	0.51	0.41	0.43	0.56	0.37
67	0.47	0.38	0.41	0.51	0.36
66	0.44	0.38	0.41	0.50	0.35
65	0.44	0.35	0.39	0.48	0.30
64	0.43	0.34	0.39	0.46	0.28
63	0.37	0.33	0.37	0.42	0.26
62	0.33	0.33	0.33	0.42	0.26
61	0.32	0.30	0.30	0.40	0.25
60	0.30	0.23	0.26	0.35	0.20
59	0.28	0.23	0.24	0.31	0.20
58	0.27	0.20	0.20	0.29	0.17
57	0.16	0.19	0.17	0.29	0.17
56	0.14	0.17	0.15	0.23	0.16
55	0.09	0.12	0.15	0.21	0.12
54	0.07	0.08	0.14	0.15	0.08
53	0.06	0.08	0.13	0.15	0.06
52	0.04	0.05	0.12	0.09	0.02
51	0.01	0.05	0.05	0.08	0.02
50	0.00	-0.02	-0.01	0.04	0.00

Value-Added Scores, 1st-49th Percentiles

Percentile	Total CLA Score	Performance Task	Analytic Writing Task	Make-an-Argument	Critique-an-Argument
49	-0.03	-0.02	-0.03	0.03	0.00
48	-0.06	-0.04	-0.08	0.02	-0.04
47	-0.08	-0.05	-0.08	-0.02	-0.07
46	-0.08	-0.07	-0.10	-0.07	-0.09
45	-0.10	-0.10	-0.10	-0.08	-0.11
44	-0.11	-0.11	-0.11	-0.09	-0.13
43	-0.15	-0.14	-0.12	-0.11	-0.13
42	-0.16	-0.15	-0.14	-0.13	-0.15
41	-0.17	-0.15	-0.14	-0.15	-0.16
40	-0.22	-0.17	-0.15	-0.15	-0.16
39	-0.23	-0.19	-0.16	-0.17	-0.17
38	-0.24	-0.21	-0.18	-0.20	-0.18
37	-0.25	-0.22	-0.28	-0.25	-0.21
36	-0.30	-0.25	-0.30	-0.28	-0.21
35	-0.33	-0.25	-0.32	-0.31	-0.24
34	-0.35	-0.26	-0.33	-0.33	-0.26
33	-0.35	-0.32	-0.36	-0.35	-0.28
32	-0.37	-0.32	-0.38	-0.38	-0.31
31	-0.39	-0.39	-0.41	-0.41	-0.37
30	-0.40	-0.39	-0.42	-0.41	-0.38
29	-0.41	-0.44	-0.45	-0.45	-0.40
28	-0.42	-0.45	-0.49	-0.50	-0.42
27	-0.48	-0.51	-0.50	-0.52	-0.44
26	-0.50	-0.51	-0.52	-0.54	-0.45
25	-0.53	-0.52	-0.54	-0.60	-0.54
24	-0.53	-0.52	-0.54	-0.61	-0.54
23	-0.56	-0.54	-0.56	-0.64	-0.58
22	-0.57	-0.55	-0.57	-0.67	-0.62
21	-0.58	-0.56	-0.65	-0.70	-0.67
20	-0.60	-0.64	-0.71	-0.78	-0.69
19	-0.63	-0.67	-0.75	-0.79	-0.69
18	-0.68	-0.68	-0.83	-0.88	-0.70
17	-0.74	-0.74	-0.86	-0.89	-0.75
16	-0.86	-0.83	-0.91	-0.90	-0.76
15	-0.94	-0.83	-0.91	-0.90	-0.77
14	-1.07	-0.85	-0.95	-0.99	-0.79
13	-1.09	-0.99	-0.96	-1.01	-0.79
12	-1.18	-1.06	-1.04	-1.15	-0.93
11	-1.22	-1.08	-1.04	-1.16	-0.95
10	-1.30	-1.11	-1.10	-1.25	-1.05
9	-1.31	-1.14	-1.14	-1.26	-1.27
8	-1.39	-1.29	-1.28	-1.34	-1.36
7	-1.62	-1.31	-1.29	-1.43	-1.45
6	-1.70	-1.56	-1.34	-1.62	-1.51
5	-1.81	-1.65	-1.90	-1.69	-1.64
4	-2.18	-2.07	-2.11	-1.73	-1.92
3	-2.50	-2.26	-2.14	-2.43	-1.98
2	-3.13	-2.57	-2.60	-2.96	-2.21
1	-3.31	-6.22	-3.16	-3.87	-2.21

In tandem with your report, we provide a CLA Student Data File, which includes variables across three categories: self-reported information from students in their CLA online profile; CLA scores and identifiers; and information provided by the registrar.

We provide student-level information for linking with other data you collect (e.g., from NSSE, CIRP, portfolios, local assessments, course-taking patterns, participation in specialized programs, etc.) to help you hypothesize about factors related to institutional performance.

Student-level scores are not designed to be diagnostic at the individual level and should be considered as only one piece of evidence about a student's skills. In addition, correlations between individual CLA scores and other measures would be attenuated due to unreliability.

Self-Reported Data

- Name (first, middle initial, last)
- Student ID
- Email address
- Date of birth
- Gender
- Race/ethnicity
- Parent education
- Primary and secondary academic major (36 categories)
- Field of study (six categories; based on primary academic major)
- English as primary language
- Attended school as freshman, sophomore, junior, senior
- Local survey responses (if applicable)

CLA Scores and Identifiers

- For Performance Task, Analytic Writing Task, Make-an-Argument, and Critique-an-Argument (depending on the tasks taken and completeness of responses):
 - CLA scores
 - Performance Level categories (i.e., well below expected, below expected, near expected, above expected, well above expected)*
 - Percentile rank across schools and within your school (among students in the same class year, based on score)
- Subscores in Analytic Reasoning and Evaluation, Writing Effectiveness, Writing Mechanics, and Problem Solving
- SLE score (if applicable, 1-50)
- Entering Academic Ability (EAA) score
- Unique CLA numeric identifiers
- Year, test window (fall or spring), date of test, and time spent on test

Registrar Data

- Class standing
- Transfer student status
- Program code and name (for classification of students into different colleges, schools, fields of study, programs, etc., if applicable)
- SAT Total (Math + Critical Reading)
- SAT I Math
- SAT I Critical Reading (Verbal)
- SAT I Writing
- ACT Composite
- GPA (not applicable for entering students)

* The residuals that inform these levels are from an OLS regression of CLA scores on EAA scores, across all schools. Roughly 20% of students (within class) fall into each performance level.

Roger Benjamin

President & Chief Executive Officer, Council for Aid to Education

James Hundley

Executive Vice President & Chief Operating Officer, Council for Aid to Education

Katharine Lyall

Board Chair, Council for Aid to Education

President Emeritus, University of Wisconsin System

Richard Atkinson

President Emeritus, University of California System

Doug Bennett

President Emeritus, Earlham College

Michael Crow

President, Arizona State University

Russell C. Deyo

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Richard Foster

Managing Partner, Millbrook Management Group, LLC

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Ronald Mason

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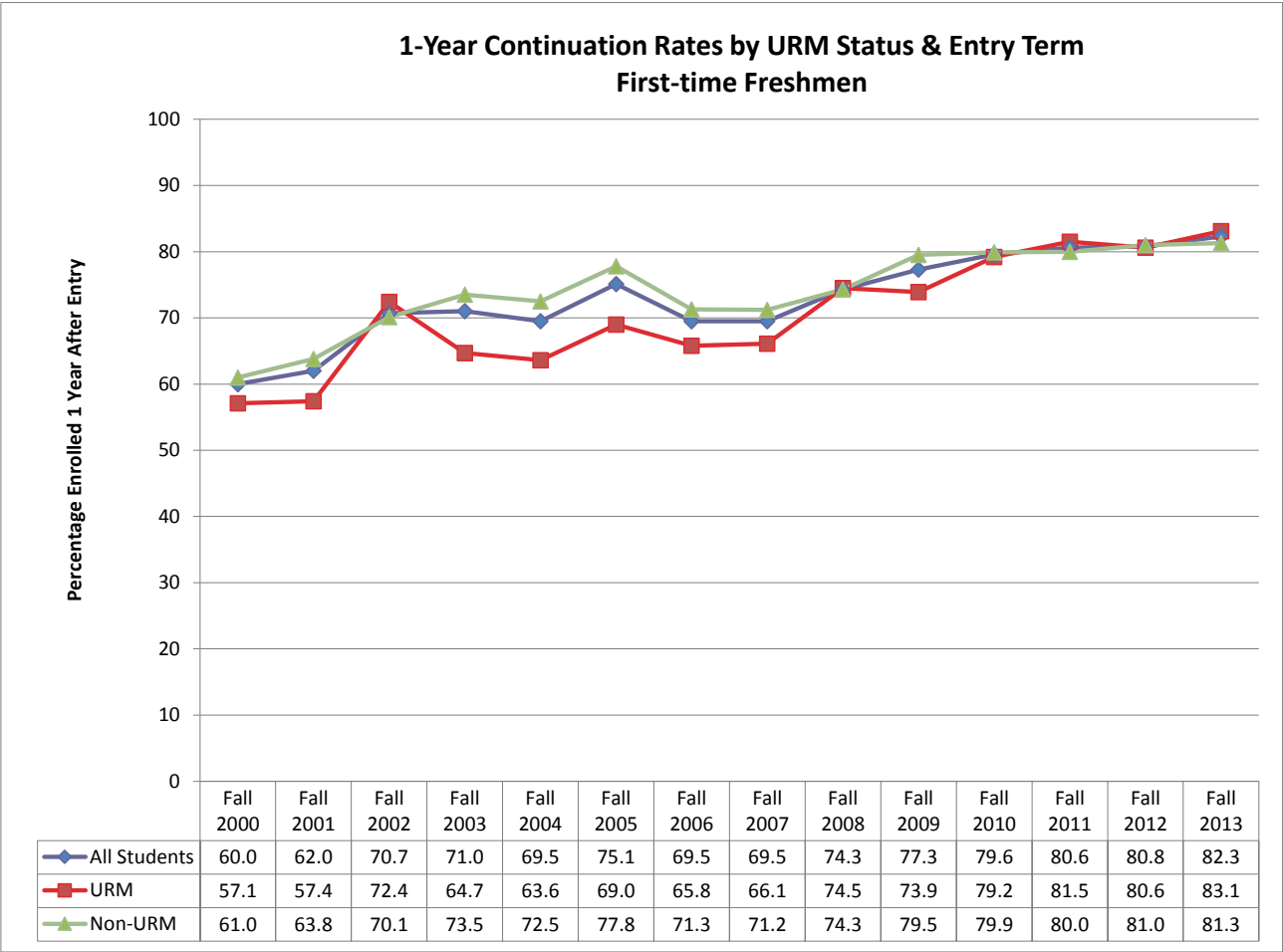
Farris W. Womack

Executive Vice President and Chief Financial Officer, Emeritus, The University of Michigan

council for aid to education

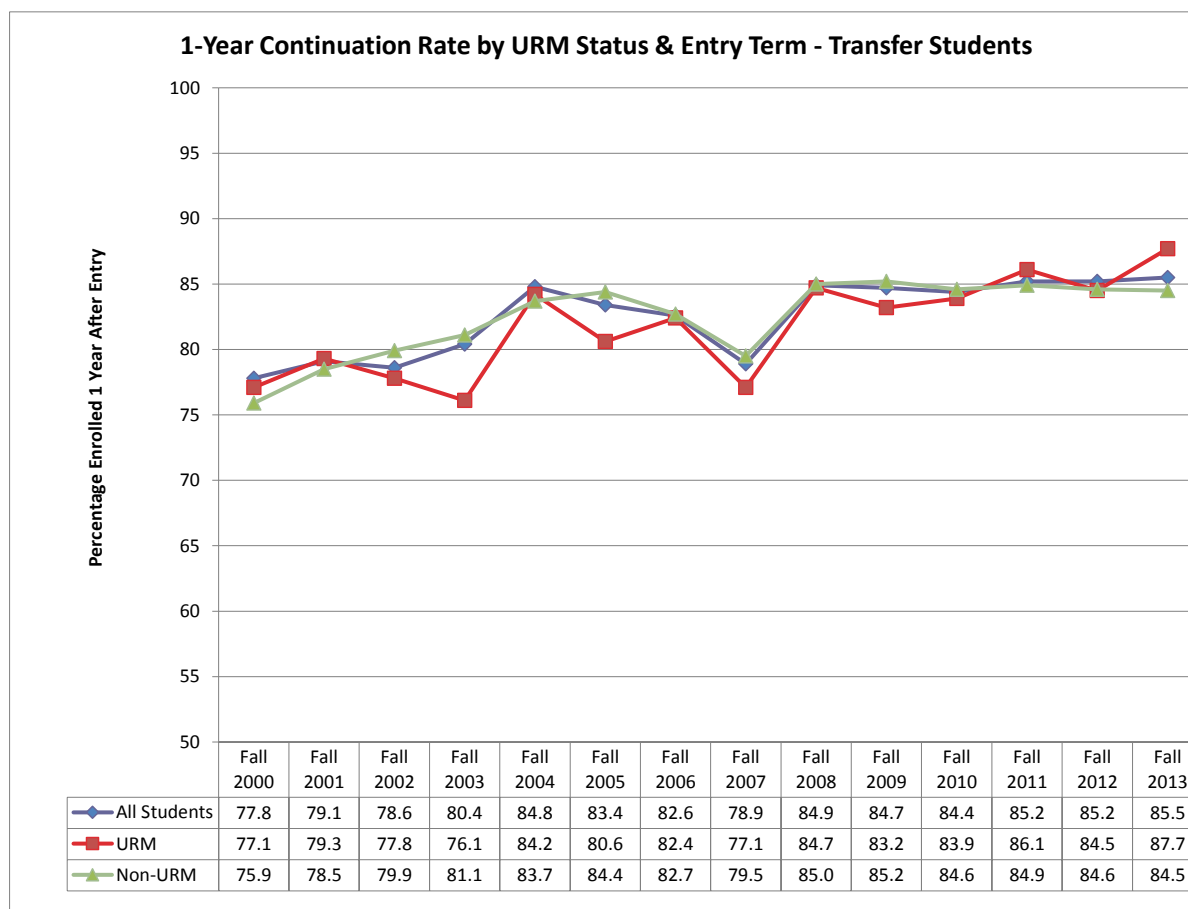
215 lexington avenue floor 16 new york new york 10016-6023
p | 212.217.0700 f | 212.661.9766 e | cla@cae.org w | www.cae.org/cla

4.6 - First-Time Freshman Graduation Rates



URM=Hispanic, African American, Native American & Pacific Islander
Non-URM=White, Asian (including Filipino), Other, Unknown & Multiple race.
Source: Retention files maintained by IPA

4.7 - Transfer Graduation Rates



URM=Hispanic, African American, Native American & Pacific Islander
Non-URM=White, Asian (including Filipino), Other, Unknown & Multiple race.
Source: Retention files maintained by IPA

4.8 - Substantive Change Action Report - BA Sociology



Senior College and
University Commission

Substantive Change Action Report

Proposal Information:

Proposal Review Date	April 30, 2014
Institution	California State University, San Marcos
Type of Substantive Change	Distance Education
Program Name / Location	BA Sociology
ALO	Regina Eisenbach
WASC Staff Liaison	Karen Graham
Committee Reviewers	JoAnn Carter-Wells, Vicky Bowden

Committee Action and Date (See Attached)

- ☒ Interim Approval on 4/30/2014
☐ Refer to Commission (No visit) on _____

Additional Information¹ (See Attached):

- ☒ Notification of Implementation
☐ Federal Site Visit Required
☐ International Visit Required
☐ Fast Track
☐ Non Compliance

¹ Items checked or listed above must be fulfilled in order to finalize Substantive Change Approval

Commission Approval and Date (For Institutional Tracking)^{2,3}:

- ☐ Approved on _____

Implementation of an approved change must occur within two years of Commission approval. If the change will be implemented more than two years after the approval date, contact your WASC Staff Liaison to determine if the change requires re-approval.

- ☐ Not Approved on _____

² Commission approval of a new degree program signifies that the program is covered by the WASC accreditation of the institution as a whole. Approval by WASC should not be represented, in marketing materials or any other forms of communication, as program-specific accreditation, such as that bestowed by specialized professional, or programmatic accrediting organizations.

³ Record the date that the Commission took action on this Substantive Change proposal for your records.

Findings of the Committee:

Commendations:

1. The institution is clearly developing access and diverse modalities for delivery of education to students in alignment with the California State University system strategic plan.
2. The institution is responding to WASC requirements for submitting for review all programs with 50% or more of a program curriculum available in an online modality.

Recommendations:

1. The institution should continue to complete the educational effectiveness "loop" by documenting how assessment findings from individual program learning outcomes are analyzed by the faculty and how programs or assessment practices are improved based upon assessment findings.
2. In future substantive change proposals, the institution is encouraged to present comprehensive assessment plans which include learning outcomes assessment, co-curricular programs assessment, and student services assessment.

Retain this document and attachments for your permanent records

Page 1 of 2



Senior College and
University Commission

Substantive Change Action Report

3. Future substantive change proposals should clearly explicate how student services funding is represented in the program budget.
4. Future substantive change proposals should describe orientation and training for both faculty and students for using an online modality.

WASC Liaison Signature:

Karen Graham /MR

Date: 5/7/2014

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Page 2 of 2

4.9 - Substantive Change Action Report – BA Social Science



Senior College and
University Commission

Substantive Change Action Report

Proposal Information:

Proposal Review Date	June 04, 2014
Institution	California State University, San Marcos
Type of Substantive Change	Distance Education
Program Name / Location	BA Social Science
ALO	Regina Eisenbach
WASC Staff Liaison	Brenda Barham Hill
Committee Reviewers	Dennis Muraoka, Tomas Gomez-Arias

Committee Action and Date (See Attached)

- ☒ Interim Approval on 6/4/2014
☐ Refer to Commission (No visit) on _____

Additional Information¹ (See Attached):

- ☒ Notification of Implementation
☐ Federal Site Visit Required
☐ International Visit Required
☐ Fast Track
☐ Non Compliance

¹ Items checked or listed above must be fulfilled in order to finalize Substantive Change Approval

Commission Approval and Date (For Institutional Tracking)^{2,3}:

- ☐ Approved on _____

Implementation of an approved change must occur within two years of Commission approval. If the change will be implemented more than two years after the approval date; contact your WASC Staff Liaison to determine if the change requires re-approval.

- ☐ Not Approved on _____

² Commission approval of a new degree program signifies that the program is covered by the WASC accreditation of the institution as a whole. Approval by WASC should not be represented, in marketing materials or any other forms of communication, as program-specific accreditation, such as that bestowed by specialized professional, or programmatic accrediting organizations.

³ Record the date that the Commission took action on this Substantive Change proposal for your records.

Findings of the Committee:

Commendations:

1. CSUSM is commended for presenting a thorough substantive change proposal which was informative and addressed all items in the subchange template.
2. Panel members were impressed with the outcomes of the program review process for the program which identified areas for program improvement as well as the need for WSCUC approval given that more than 50% of courses for the degree are offered online.
3. CSUSM is commended for promoting the use of distance education as a means of better serving the needs of a diverse student body.
4. The program's educational effectiveness assessment process is commendable.

Recommendations:

Retain this document and attachments for your permanent records

Page 1 of 2



Senior College and
University Commission

Substantive Change Action Report

1. The panel encourages CSUSM to continue its review of the curriculum approval process with regard to the designation of specific courses as appropriate for delivery via distance education.
2. The panel supports CSUSM's efforts to put in place practices to review online version of courses within degree programs.
3. Faculty in the Social Sciences program should ensure that educational effectiveness assessment at the course and program level for online and face to face courses compares and contrasts student achievement of outcomes.

WASC Liaison Signature:

Brinda Bantya Hill IMR

Date: 6/5/2014

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Page 2 of 2

4.10 - Substantive Change Action Report – BA Criminology and Justice Studies



Senior College and
University Commission

Substantive Change Action Report

Proposal Information:

Proposal Review Date	June 04, 2014
Institution	California State University, San Marcos
Type of Substantive Change	Distance Education
Program Name / Location	BA Criminology and Justice Studies
ALO	Regina Eisenbach
WASC Staff Liaison	Brenda Barham Hill
Committee Reviewers	Dennis Muraoka, Tomas Gomez-Arias

Committee Action and Date (See Attached)

Additional Information¹ (See Attached):

- ☒ Interim Approval on 6/4/2014
☐ Refer to Commission (No visit) on _____

- ☒ Notification of Implementation
☐ Federal Site Visit Required
☐ International Visit Required
☐ Fast Track
☐ Non Compliance

¹ Items checked or listed above must be fulfilled in order to finalize Substantive Change Approval

Commission Approval and Date (For Institutional Tracking)^{2,3}:

- ☐ Approved on _____

Implementation of an approved change must occur within two years of Commission approval. If the change will be implemented more than two years after the approval date; contact your WASC Staff Liaison to determine if the change requires re-approval.

- ☐ Not Approved on _____

² Commission approval of a new degree program signifies that the program is covered by the WASC accreditation of the institution as a whole. Approval by WASC should not be represented, in marketing materials or any other forms of communication, as program-specific accreditation, such as that bestowed by specialized professional, or programmatic accrediting organizations.

³ Record the date that the Commission took action on this Substantive Change proposal for your records.

Findings of the Committee:

Commendations:

1. CSUSM is commended for presenting a thorough substantive change proposal which was informative and addressed all items in the subchange template.
2. Panel members were impressed with the outcomes of the program review process for the program which identified areas for program improvement as well as the need for WSCUC approval given that more than 50% of courses for the degree are offered online.
3. CSUSM is commended for promoting the use of distance education as a means of better serving the needs of a diverse student body.
4. The program's educational effectiveness assessment process is commendable.

Recommendations:

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Page 1 of 2



Senior College and
University Commission

Substantive Change Action Report

1. The panel encourages CSUSM to continue its review of the curriculum approval process with regard to the designation of specific courses as appropriate for delivery via distance education.
2. The panel supports CSUSM's efforts to put in place practices to review online version of courses within degree programs.
3. Faculty in the Criminology and Social Justice program should ensure that educational effectiveness assessment at the course and program level for online and face to face courses compares and contrasts student achievement of outcomes.
4. The Criminology and Social Justice program faculty are encouraged to continue efforts to align courses from contributing disciplines to the program learning outcomes and to review the curriculum to ensure that alignment.

WASC Liaison Signature:

Brenda Basham Hill /MR

Date: 6/5/2014

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Page 2 of 2

4.11 Art and Lectures Series brochure (Sp 2015) and booklet (Fa2014)



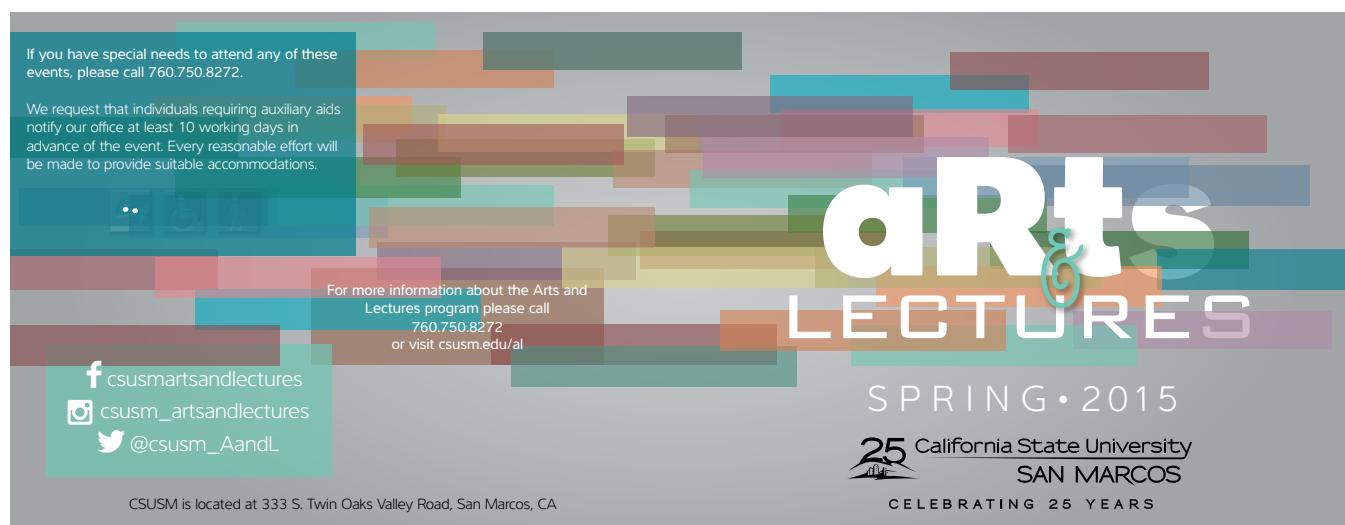
aRts LECTURES
760.750.8272
csusm.edu/al

If you have special needs to attend any of these events, please call 760.750.8272. We request that individuals requiring auxiliary aids notify our office at least 10 working days in advance of the event. Every reasonable effort will be made to provide suitable accommodations.

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For more information about the Arts and Lectures program please call 760.750.8272 or visit csusm.edu/al

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