University of Georgia

2009-2010 CLA INSTITUTIONAL REPORT

Your 2009-2010 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.

## Appendices

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

## 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.

The Collegiate Learning Assessment (CLA) offers an authentic approach to assessment and improvement of teaching and learning in higher education. Over 500 institutions and 200,000 students have participated to date. Growing commitment on the part of higher education to assess student learning makes this a good time to review the distinguishing features of the CLA and how it connects to improving teaching and learning on your campus.

The CLA is intended primarily to assist faculty, department chairs, school administrators and others interested in programmatic change to improve teaching and learning, particularly with respect to strengthening higher order skills.

The CLA helps campuses follow a continuous improvement model that positions faculty as central actors. CLA Education empowers faculty by focusing on curriculum and pedagogy and the link between assessment and teaching and learning.

The continuous improvement model also requires multiple assessment indicators beyond the CLA because no single test can serve as the benchmark for all student learning in higher education.

This, however, does not mean certain skills judged to be important by most faculty and administrators across virtually all institutions cannot be measured; indeed, the higher order skills the CLA focuses on fall into this measurable category.

The CLA presents realistic problems that require students to analyze complex materials. Several different types of materials are used that vary in relevance to the task, credibility, and other characteristics. Students' written responses to the task are graded to assess their abilities to think critically, reason analytically, solve problems, and communicate clearly and cogently.

The institution—not the student—is the initial primary unit of analysis. The CLA is designed to measure an institution's contribution, or value added, to the development of these competencies, including the effects of changes to curriculum and pedagogy.

The CLA uses detailed scoring guides to accurately and reliably evaluate student responses. It also encourages institutions to compare their student learning results on the CLA with learning at other institutions and on other assessments.

The signaling quality of the CLA is important because institutions need to benchmark (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. Otherwise, how do institutions know how well they are doing?

Yet, the CLA is not about ranking institutions. Rather, it is about highlighting differences between them that can lead to improvements in teaching and learning.

While the CLA is indeed an assessment instrument, it is deliberately designed to contribute directly to the improvement of teaching and learning. In this respect it is in a league of its own.

The CLA uses constructed-response tasks and value-added methodology to measure your students' performance in higher-order skills: critical thinking, analytic reasoning, problem solving, and written communication.

Starting with the 2009–2010 CLA administration, your institutional results reflect an enhancement in the CLA value-added methodology. Institutional value added is no longer estimated as the difference between freshman and senior deviation scores through an ordinary least squares (OLS) regression model. Rather, it is estimated through a statistical technique known as hierarchical linear modeling (HLM), which accounts for CLA score variation within and between schools.

Under the enhanced model, 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 were included in institutional analyses.

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

While this approach does not depend on mean differences between freshmen and seniors like the original CLA approach, it still works as a value-added model because, for example, if the seniors at a particular school performed higher than expected on the CLA, one may infer that greater growth has occurred at that school than at the typical school enrolling students with similar pre-college 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 scores produced by the old and new approaches are highly correlated and would be essentially identical if large samples of students were assessed at all schools. Analyses reveal that the enhanced approach produces value-added scores that are slightly more reliable and have substantially greater consistency across test administrations than those generated by the original approach (without increasing sample size). Appendix G provides additional details on the derivation and interpretation of the value-added results.

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.

In addition, CLA results no longer separately report "unadjusted" and "adjusted" comparisons for each class, because the adjustment came from an OLS regression equation that is no longer used. In a sense, the new value-added estimates correspond to the old "adjusted" estimates, since they take into account freshman CLA performance and Entering Academic Ability (EAA). We also provide "unadjusted" performance information for both seniors and freshmen, including means (averages), standard deviations (a measure of the variation in the sample), and percentile ranks (the percentage of schools that had lower performance than yours).

Our analyses include results from all 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.

## Value-Added and Precision Estimates

**3.1**

| | Performance Level | Value-Added Score | Value-Added Percentile Rank | Confidence Interval Lower Bound | Confidence Interval Upper Bound |
|---|---|---|---|---|---|
| Total CLA Score | Near | 0.36 | 60 | -0.32 | 1.04 |
| Performance Task | Near | 0.85 | 83 | 0.08 | 1.62 |
| Analytic Writing Task | Near | -0.16 | 43 | -0.89 | 0.57 |
| Make-an-Argument | Near | -0.03 | 46 | -0.81 | 0.75 |
| Critique-an-Argument | Near | -0.26 | 39 | -1.05 | 0.53 |

## Seniors: Unadjusted Performance

**3.2**

| | Number of Seniors | Mean Score | Mean Score Percentile Rank | 25th Percentile Score | 75th Percentile Score | Standard Deviation |
|---|---|---|---|---|---|---|
| Total CLA Score | 95 | 1357 | 96 | 1236 | 1477 | 155 |
| Performance Task | 46 | 1331 | 96 | 1212 | 1464 | 174 |
| Analytic Writing Task | 49 | 1381 | 96 | 1302 | 1489 | 132 |
| Make-an-Argument | 49 | 1374 | 95 | 1284 | 1461 | 141 |
| Critique-an-Argument | 49 | 1388 | 95 | 1251 | 1510 | 177 |
| EAA | 95 | 1280 | 96 | 1170 | 1400 | 134 |

## Freshmen: Unadjusted Performance

**3.3**

| | Number of Freshmen | Mean Score | Mean Score Percentile Rank | 25th Percentile Score | 75th Percentile Score | Standard Deviation |
|---|---|---|---|---|---|---|
| Total CLA Score | 108 | 1261 | 96 | 1154 | 1352 | 133 |
| Performance Task | 54 | 1215 | 94 | 1140 | 1299 | 128 |
| Analytic Writing Task | 54 | 1306 | 96 | 1229 | 1387 | 123 |
| Make-an-Argument | 54 | 1314 | 96 | 1238 | 1409 | 153 |
| Critique-an-Argument | 54 | 1298 | 96 | 1189 | 1405 | 148 |
| EAA | 108 | 1248 | 95 | 1160 | 1330 | 118 |

## Student Sample Summary

3.4

| | Number of Freshmen | Number of Seniors | Freshman Percentage | Senior Percentage | Percentage Difference |
|---|---|---|---|---|---|
| **Transfer** | | | | | |
| Transfer Students | 0 | 0 | 0 | 0 | 0 |
| Non-Transfer Students | 108 | 95 | 100 | 100 | 0 |
| **Gender** | | | | | |
| Male | 44 | 30 | 41 | 32 | -9 |
| Female | 64 | 65 | 59 | 68 | 9 |
| Decline to State | 0 | 0 | 0 | 0 | 0 |
| **Primary Language** | | | | | |
| English Primary Language | 97 | 89 | 90 | 94 | 4 |
| Other Primary Language | 11 | 6 | 10 | 6 | -4 |
| **Field of Study** | | | | | |
| Sciences and Engineering | 26 | 9 | 24 | 9 | -15 |
| Social Sciences | 20 | 9 | 19 | 9 | -10 |
| Humanities and Languages | 14 | 18 | 13 | 19 | 6 |
| Business | 24 | 35 | 22 | 37 | 15 |
| Helping / Services | 8 | 14 | 7 | 15 | 8 |
| Undecided / Other / N/A | 16 | 10 | 15 | 11 | -4 |
| **Race / Ethnicity** | | | | | |
| American Indian / Alaska Native | 0 | 0 | 0 | 0 | 0 |
| Asian / Pacific Islander | 11 | 6 | 10 | 6 | -4 |
| Black, Non-Hispanic | 11 | 9 | 10 | 9 | -1 |
| Hispanic | 3 | 4 | 3 | 4 | 1 |
| White, Non-Hispanic | 78 | 73 | 72 | 77 | 5 |
| Other | 5 | 3 | 5 | 3 | -2 |
| Decline to State | 0 | 0 | 0 | 0 | 0 |
| **Parent Education** | | | | | |
| Less than High School | 0 | 2 | 0 | 2 | 2 |
| High School | 10 | 7 | 9 | 7 | -2 |
| Some College | 22 | 12 | 20 | 13 | -7 |
| Bachelor's Degree | 35 | 29 | 32 | 31 | -1 |
| Graduate or Professional Degree | 41 | 45 | 38 | 47 | 9 |

## 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 CLA total score value-added estimates displyed in this figure were computed.

3.5 Observed CLA Scores vs. Expected CLA Scores
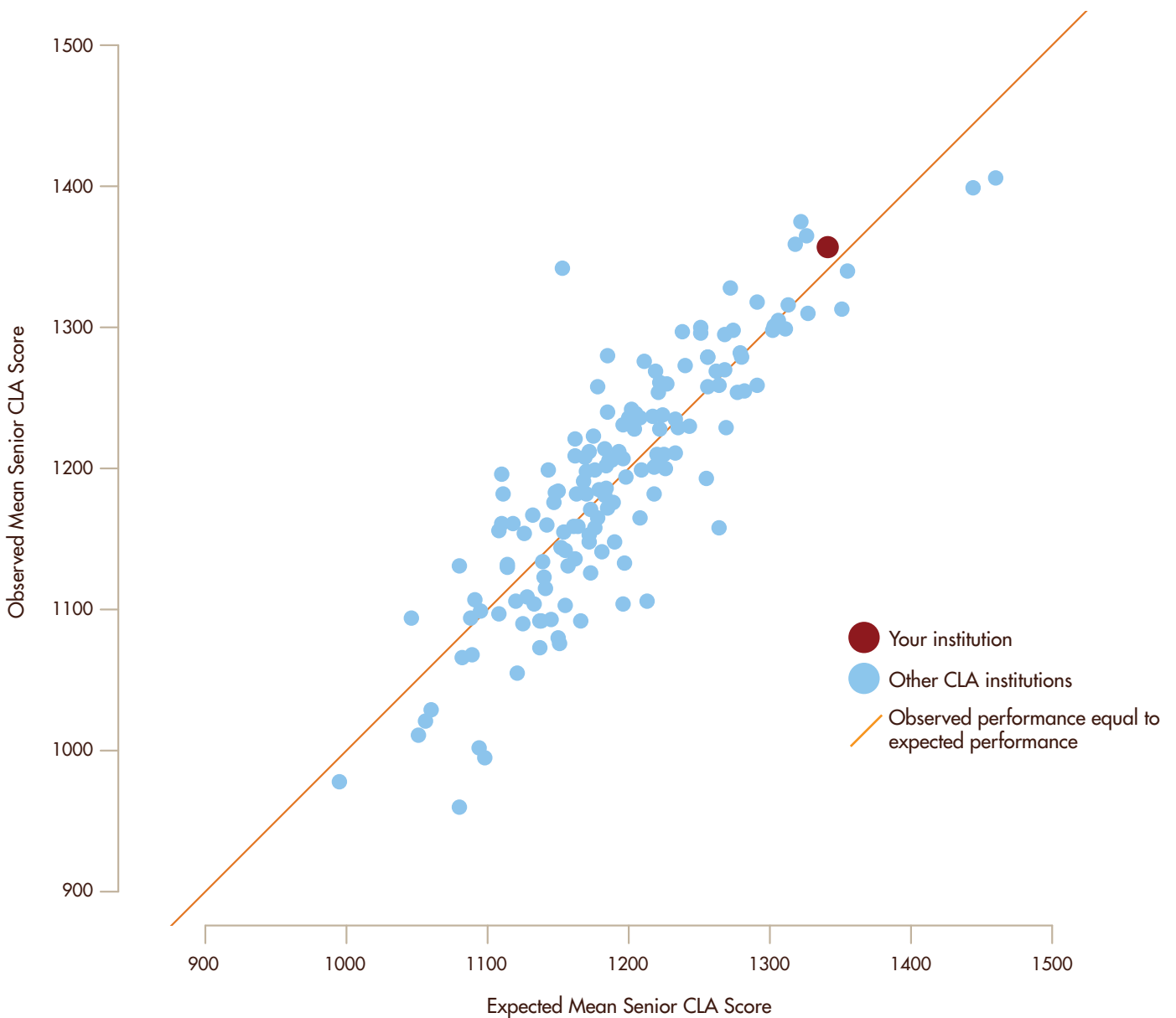
## Performance Distributions

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 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.
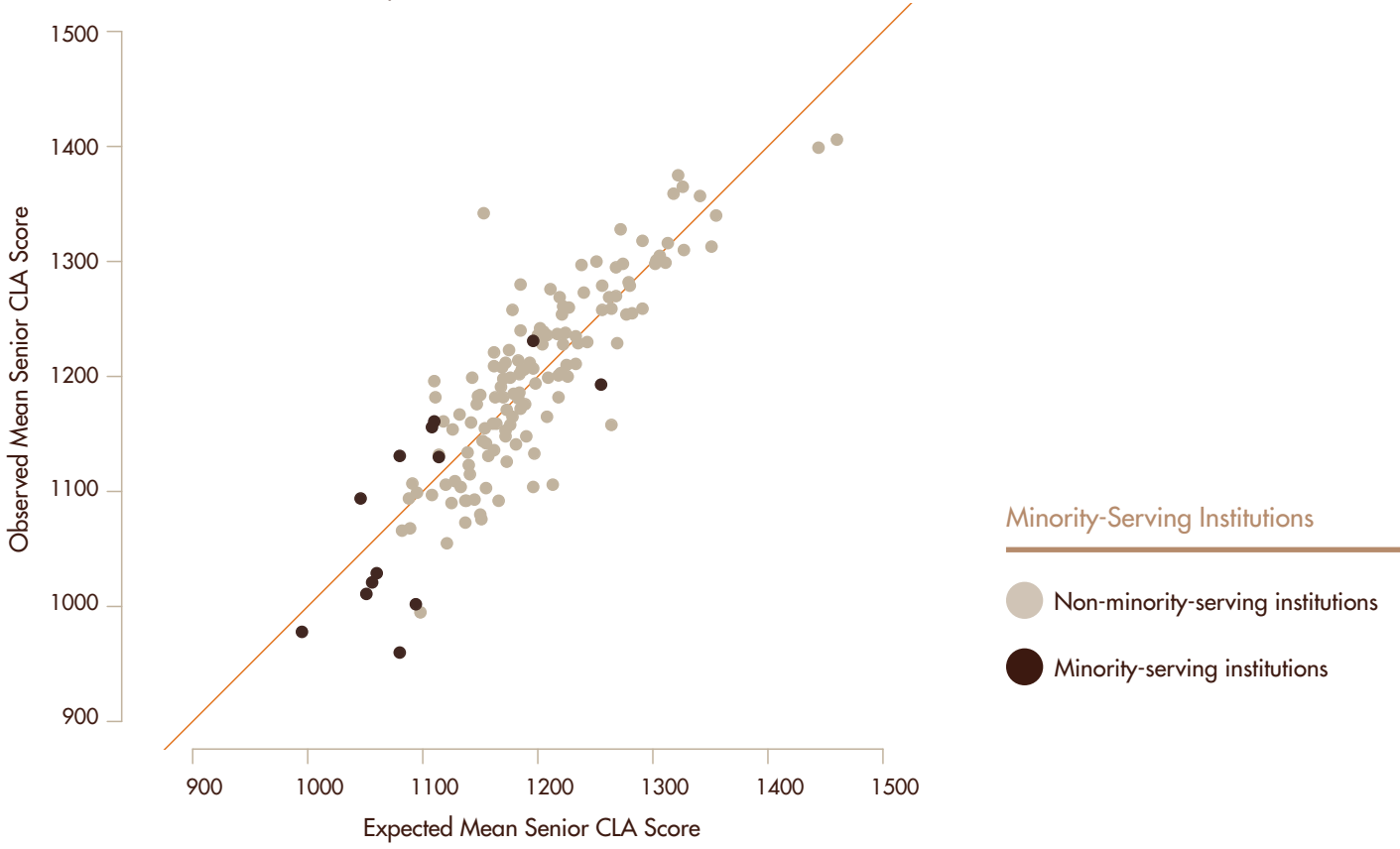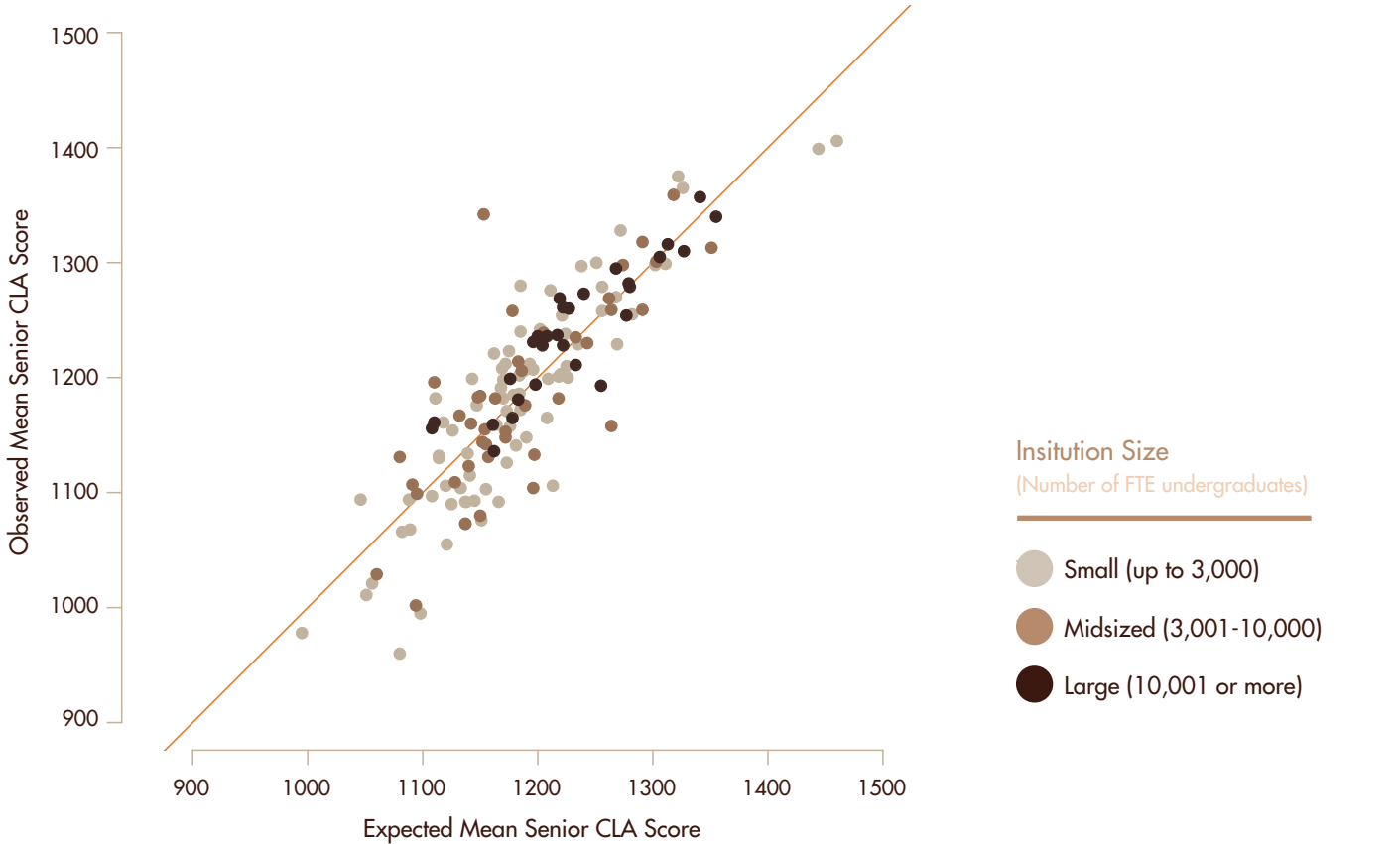
### 4.1 Seniors

| | Number of Schools | Mean Score | 25th Percentile Score | 75th Percentile Score | Standard Deviation |
|---|---|---|---|---|---|
| Total CLA Score | 159 | 1191 | 1133 | 1255 | 90 |
| Performance Task | 159 | 1156 | 1113 | 1204 | 89 |
| Analytic Writing Task | 159 | 1226 | 1155 | 1287 | 95 |
| Make-an-Argument | 159 | 1215 | 1155 | 1280 | 97 |
| Critique-an-Argument | 159 | 1235 | 1164 | 1302 | 97 |
| EAA | 159 | 1071 | 994 | 1130 | 107 |

### 4.2 Freshmen

| | Number of Schools | Mean Score | 25th Percentile Score | 75th Percentile Score | Standard Deviation |
|---|---|---|---|---|---|
| Total CLA Score | 153 | 1092 | 1033 | 1156 | 93 |
| Performance Task | 153 | 1070 | 1010 | 1128 | 89 |
| Analytic Writing Task | 153 | 1115 | 1049 | 1183 | 101 |
| Make-an-Argument | 153 | 1118 | 1056 | 1194 | 108 |
| Critique-an-Argument | 153 | 1111 | 1040 | 1177 | 97 |
| EAA | 153 | 1054 | 979 | 1124 | 115 |

Insitution Size
(Number of FTE undergraduates)

Small (up to 3,000)

Midsized (3,001-10,000)

Large (10,001 or more)

Minority-Serving Institutions

Non-minority-serving institutions

Minority-serving institutions

Insitution Type

- Doctoral
- Masters
- Bachelors



Sector

- Public
- Private
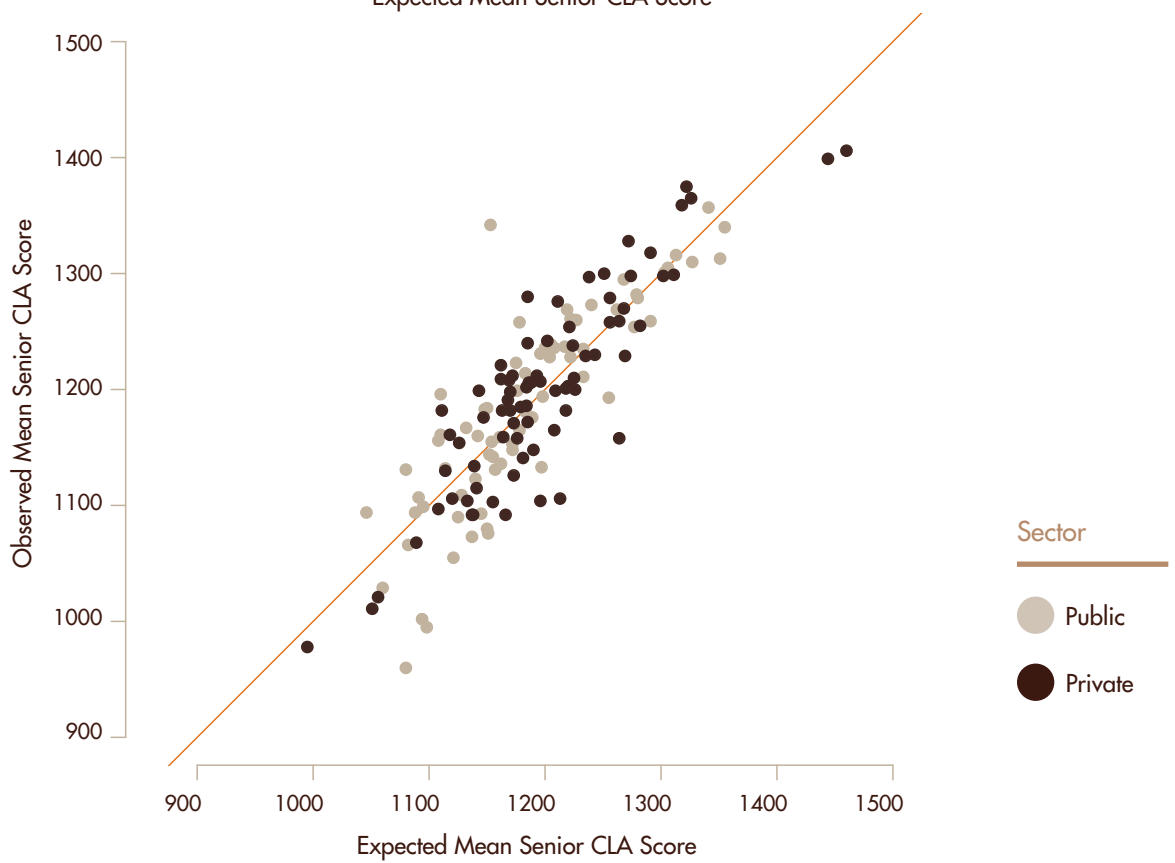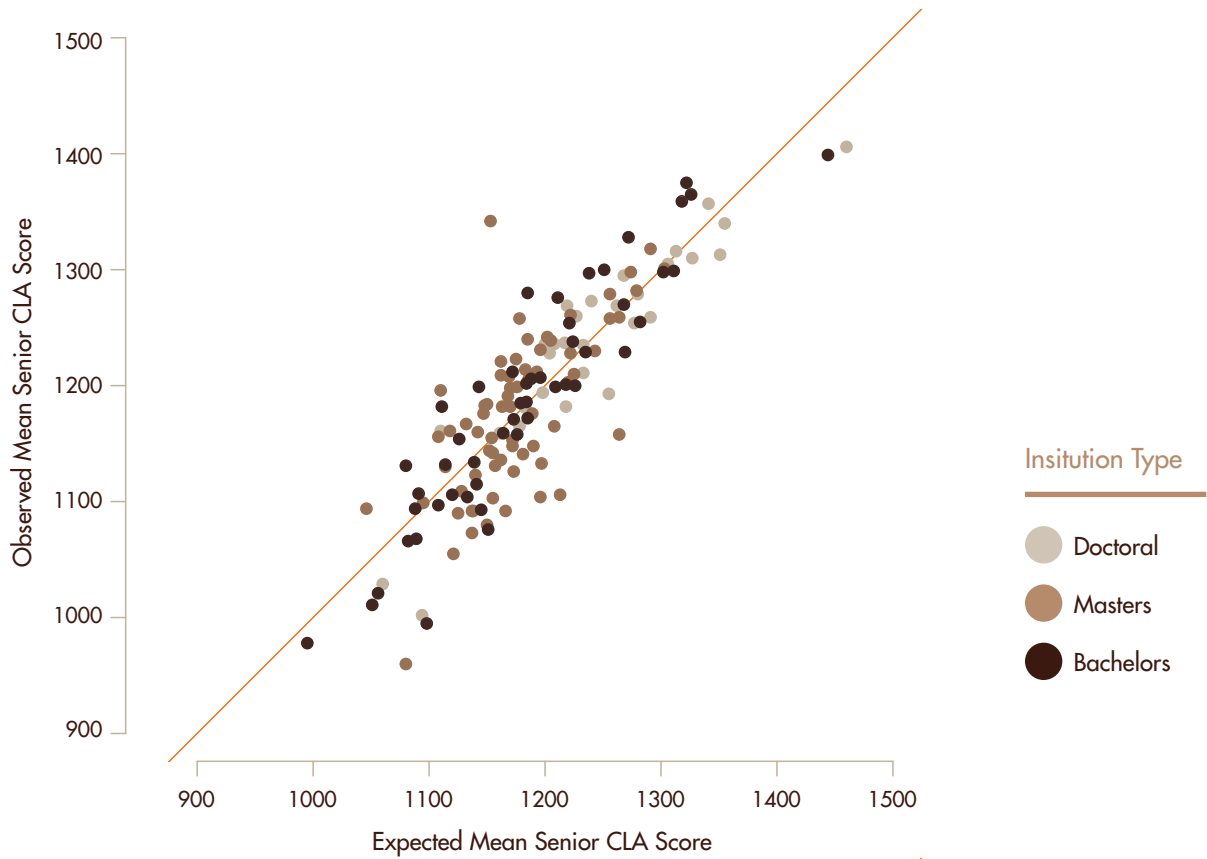
### Sample Representativeness

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 11 points higher than that of the entire senior class*: 1071 versus 1060 ($n$ = 155 institutions).  Further, the correlation between the average EAA score of CLA seniors and their classmates was extremely high ($r$ = .94, $n$ = 155 institutions).

The pattern for freshmen was similar.  The average EAA score of CLA freshmen was only 4 points higher than that of the entire freshman class (1050 versus 1046, over $n$ = 153 institutions), and the correlation between the average EAA score of CLA freshmen and their classmates was similarly high ($r$ = .90, $n$ = 153 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 155 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 1,713 four-year 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 = 1,713) | | CLA (n = 148) | |
|---|---|---|---|---|
| | Number | Percentage | Number | Percentage |
| Doctorate-granting Universities | 283 | 17 | 30 | 20 |
| Master's Colleges and Universities | 663 | 39 | 68 | 46 |
| Baccalaureate Colleges | 767 | 45 | 50 | 34 |

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

## School Characteristics

Table 5.2 provides comparative statistics on some important characteristics of colleges and universities across the nation with those of the CLA schools, and suggests that these CLA schools are fairly representative of four-year, not-for-profit institutions nationally. Percentage public is one exception.

### 5.2    School Characteristics of Institutional Sample

| School Characteristic | Nation | CLA |
|---|---|---|
| Percentage public | 33 | 49 |
| Percentage Historically Black College or University (HBCU) | 5 | 5 |
| Mean percentage of undergraduates receiving Pell grants | 35 | 32 |
| Mean six-year graduation rate | 52 | 53 |
| Mean Barron's selectivity rating | 3.6 | 3.2 |
| Mean estimated median SAT score | 1061 | 1052 |
| Mean number of FTE undergraduate students (rounded) | 3,849 | 5,985 |
| Mean student-related expenditures per FTE student (rounded) | $12,165 | $11,699 |

*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.*

## School List

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
Allegheny College
Amherst College
Arizona State University
Ashland University
Auburn University
Aurora University
Averett University
Barton College
Beloit College
Bethel University
Bluefield State College
Bradley University
Cabrini College
California Baptist University
California State University, Fresno
Carlow University
Cedar Crest College
Central Connecticut State University
Champlain College
Claflin University
Clarke University
College of Notre Dame of Maryland
College of Saint Benedict / St. John's
  University
Colorado State University
Concord University
Concordia College
Coppin State University
Dillard University
Dominican University
Dominican University of California
Drake University
Eastern Connecticut State University
Eastern Illinois University
Eckerd College

Emory & Henry College
Emporia State University
Eureka College
Fairmont State University
Fayetteville State University
Florida State University
Fort Hays State University
Franklin Pierce University
Frostburg State University
Glenville State College
Grand Canyon University
Greenville College
Hardin-Simmons University
Hastings College
Hilbert College
Illinois College
Indiana University Kokomo
Indiana University of Pennsylvania
Indiana Wesleyan University
Jackson State University
Jacksonville State University
Jamestown College
Juniata College
Keene State College
Kent State University
LaGrange College
Lane College
Loyola University New Orleans
Lynchburg College
Lynn University
Marian University
Marshall University
Marywood University
Mayville State University
Minot State University
Misericordia University
Mississippi University for Women
Morgan State University
Morningside College

Mount Saint Mary College
Nebraska Wesleyan University
North Park University
Nyack College
Ouachita Baptist University
Pacific Lutheran University
Peace College
Pittsburg State University
Presbyterian College
Randolph Macon College
Rice University
Richard Stockton College of New Jersey
Ripon College
Robert Morris University
Saginaw Valley State University
Saint Anselm College
Seton Hill University
Slippery Rock University
Southern Connecticut State University
Southern Oregon University
Southwest Minnesota State University
Southwestern University
Springfield College
St. Olaf College
Stephens College
Stonehill College
Sul Ross State University
Tarleton State University
Texas Lutheran University
Texas Southern University
Texas State University San Marcos
Texas Tech University
The College of St. Scholastica
The Ohio State University
The University of Kansas
The University of Toledo
Towson University
Trinity Christian College
Truman State University

## School List

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 (continued)

University of Charleston
University of Colorado at Colorado Springs
University of Colorado, Boulder
University of Evansville
University of Findlay
University of Georgia
University of Great Falls
University of Hartford
University of Houston
University of Louisiana at Lafayette
University of Missouri - Kansas City
University of Missouri - St. Louis
University of New Mexico
University of North Dakota
University of Northern Colorado
University of Pittsburgh
University of Texas at Arlington
University of Texas at Austin
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-Pan American
University of Washington Tacoma
University of West Georgia
University of Wisconsin - Milwaukee
University of Wisconsin - Oshkosh
Upper Iowa University
Ursinus College
Ursuline College
Wagner College
Weber State University
Wesley College
West Chester University
West Liberty University

West Virginia University
West Virginia University Institute of
  Technology
Western Kentucky University
Western Michigan University
Western Oregon University
Western Washington University
Westminster College (MO)
Westminster College (UT)
Wichita State University Fairmount College
Willamette University
William Woods University
Winston-Salem State University
Wofford College
Youngstown State University

### CCLA Schools

Bellevue College
Collin College
Colorado Mountain College
Howard Community College
Missouri State University West Plains
Northern Marianas College

### CWRA Schools

A&M Consolidated High School
Akins High School
Anson New Tech School
Asheville School
Aynor High School
Bayside High
Brimmer & May School
First Colonial High
Floyd Kellam High
Frank W. Cox High
Gilmour Academy
Green Run High

Heritage Hall
Herricks High School
Hillside New Tech High School
Holland Hall
Ke Kula O Samuel M Kamakau
Kempsville High
Kimball Union Academy
Landstown High
Mason High School
Metairie Park Country Day School
Mid-Pacific Institute
Moses Brown School
Nanakuli High School
Napa New Tech High School
Ocean Lakes High
Princess Anne High
Ramsey High School
Randolph-Henry High School
Riverdale Country School
Sacramento New Tech High School
Salem High School
School of IDEAS
Severn School
Socastee High School
Sonoma Academy
St. Andrew's School
St. Gregory College Prep
Tallwood High
Tech Valley High School
The Bronxville School
The Hotchkiss School
The Lawrenceville School
The Scholar's Academy
Waianae High School
Warren New Tech High School
Watershed School
Wildwood School

We encourage institutions to examine performance across CLA tasks and communicate results across campus, link student-level CLA results with other data sources, pursue in-depth sampling, stay informed through the CLA Spotlight series, and participate in CLA Education offerings.

Student-level CLA results are provided for you to link to other data sources (e.g., course-taking patterns, grades, portfolios, student satisfaction and engagement, major-specific tests, etc.).

These internal analyses can help you generate hypotheses for additional research, which you can pursue through CLA in-depth sampling in experimental areas (e.g., programs or colleges within your campus) in subsequent years or simultaneously.

We welcome and encourage your participation in the CLA Spotlight—a series of free informational web conferences. Each CLA Spotlight features campuses doing promising work using the CLA, guest-speakers from the larger world of assessment, and/or CLA staff members who provide updates or insights to CLA-related programs and projects.

CLA Education focuses on curriculum and pedagogy, and embraces the crucial role that faculty play in the process of assessment.

The flagship program of CLA Education is the Performance Task Academy, which shifts the focus from general assessment to the course-level work of faculty. The Performance Task Academy provides an opportunity for faculty members to learn to diagnose their individual students' work and to receive guidance in creating their own performance tasks, which are designed to supplement the educational reform movement toward a case and problem approach in learning and teaching.

A CLA Education website also has been created to serve as a library for performance tasks developed by faculty. For more information, visit www.claintheclassroom.org, or contact Director of CLA Education, Dr. Marc Chun at mchun@cae.org.

Through the steps noted above we encourage institutions to move toward a continuous system of improvement in teaching and learning stimulated by the CLA. Without your contributions, the CLA would not be on the exciting path that it is today. We look forward to your continued involvement!

## Introduction

The CLA consists of three types of prompts within two types of task: the Performance Task and the Analytic Writing Task. Most students take one task or the other. The Analytic Writing Task includes a pair of prompts called Make-an-Argument and Critique-an-Argument.

The CLA uses direct measures of skills in which students perform cognitively demanding tasks. All CLA measures are administered online and contain open-ended prompts that require constructed responses. There are no multiple-choice questions.

The CLA tasks require that students integrate critical thinking, analytic reasoning, problem solving, and written communication skills. The holistic integration of these skills on the CLA tasks 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. On the left side of the screen are a question and a response box. 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, analyze and organize them on multiple dimensions, and then 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 prompts: a Make-an-Argument question that asks them to support or reject a position on some issue; and a Critique-an-Argument question 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; crafting an overall response that generates interest, provokes thought, and persuades the reader; organizing the structure of the essay (e.g., paragraphing, ordering of ideas and sentences within paragraphs); employing transitions and varied sentence structure to maintain the flow of the argument; and utilizing sophisticated grammar and vocabulary.

## Critique-an-Argument

A Critique-an-Argument prompt asks students, in 30 minutes, to critique an argument by discussing how well reasoned they find it to be (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 a grammatically correct, organized, well-developed, logically sound, and neutral in tone.

## 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. Your document library contains the following materials:

## Example Document Library

- Newspaper article about the accident

- Federal Accident Report on in-flight breakups in single-engine planes

- Internal Correspondence (Pat's e-mail to you and Sally's e-mail to Pat)

- Charts relating to SwiftAir's performance characteristics

- Excerpt from 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 the 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 percent above their recommended weight for height and age.) This study sampled 50 schoolchildren, ages 5-11, 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.

CLA results operate as a signaling tool of overall institutional performance on tasks that measure higher order skills holistically. However, the three types of CLA tasks—Performance, Make-an-Argument and Critique-an-Argument—differ slightly in the combination of skills necessary to perform well.

Indeed, some schools score significantly lower on one type than on another. Examining performance across CLA task types can serve as an initial diagnostic exercise. Specifically, cases of lower performance (e.g., relative to the other task types or to incoming academic ability) on a particular task type indicate that students are not demonstrating the expected level of skill at  analyzing complex, realistic scenarios;  writing a persuasive, analytic essay to support a position on an issue; and/or  critiquing written arguments.

## Performance Task

### Analyzing
### complex, realistic scenarios

Synthesizing information from multiple sources; recognizing conflicting evidence, weighing the credibility of different sources of evidence; identifying logical fallacies, interpreting data, tables, and figures correctly; drawing reasonable and logical inferences from the available information; developing sound conclusions based on all available evidence; and utilizing the most relevant and credible evidence available to justify their conclusion.

## Make-an-Argument

### Writing
### a persuasive, analytic essay

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; crafting an overall response that generates interest, provokes thought, and persuades the reader; organizing the structure of the essay (e.g., paragraphing, ordering of ideas and sentences within paragraphs); employing transitions and varied sentence structure to maintain the flow of the argument; and utilizing sophisticated grammar and vocabulary.

## Critique-an-Argument

### Critiquing
### written arguments

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 their critique in a written response that is a grammatically correct, organized, well-developed, logically sound, and neutral in tone.

## Iterative Development Process

A team of researchers and writers generate ideas for Make-an-Argument and Critique-an-Argument prompts and Performance Task storylines, and then contribute 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 the student to read and attend to multiple sources of information in the documents, and later questions require the student to evaluate the documents and then use their analysis 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 pilot test are examined to identify what pieces of information are unintentionally ambiguous, what pieces of information in the documents should be removed, etc. 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.

## Introduction

This section summarizes the types of questions addressed by CLA scoring of all task types. Because each CLA task and their scoring rubrics differ, not every item listed is applicable to every task. The tasks cover different aspects of critical thinking, analytic reasoning, problem solving, and writing and in doing so can, in combination, better assess the entire domain of performance.

## Assessing Critical Thinking, Analytic Reasoning and Problem Solving

Applied in combination, critical thinking, analytic reasoning and problem solving skills are required to perform well on CLA tasks. We define these skills as how well students can evaluate and analyze source information, and subsequently draw conclusions and present an argument based upon that analysis. In scoring, we specifically consider the following items to be important aspects of these skills.

(See next pages for detail.)

## Assessing Writing

Analytic writing skills invariably depend on clarity of thought. Therefore, analytic writing and critical thinking, analytic reasoning, and problem solving are related skills sets. The CLA measures critical thinking performance by asking students to explain in writing their rationale for various conclusions. In doing so, their performance is dependent on both writing and critical thinking as integrated rather than separate skills. We evaluate writing performance using holistic scores that consider several aspects of writing depending on the task. The following are illustrations of the types of questions we address in scoring writing on the various tasks.

(See next pages for detail.)

Assessing Critical Thinking,
Analytic Reasoning and
Problem Solving

## Evaluation of evidence

How well does the student assess the quality and relevance
of evidence, including:

- Determining what information is or is not pertinent to
  the task at hand

- Distinguishing between rational claims and emotional
  ones, fact from opinion

- Recognizing the ways in which the evidence might be
  limited or compromised

- Spotting deception and holes in the arguments of others

- Considering all sources of evidence

## Analysis and synthesis of evidence

How well does the student analyze and synthesize data and
information, including:

- Presenting his/her own analysis of the data or
  information (rather than "as is")

- Committing or failing to recognize logical flaws (e.g.,
  distinguishing correlation from causation)

- Breaking down the evidence into its component parts

- Drawing connections between discrete sources of data
  and information

- Attending to contradictory, inadequate or ambiguous
  information

## Drawing conclusions

How well does the student form a conclusion from his/her
analysis, including:

- Constructing cogent arguments rooted in data/
  information rather than speculation/opinion

- Selecting the strongest set of supporting data

- Prioritizing components of the argument

- Avoiding overstated or understated conclusions

- Identifying holes in the evidence and subsequently
  suggesting additional information that might resolve the
  issue

## Acknowledging alternative explanations/viewpoints

How well does the student acknowledge additional
perspectives and consider other options, including:

- Recognizing that the problem is complex with no clear
  answer

- Proposing other options and weighing them in the
  decision

- Considering all stakeholders or affected parties in
  suggesting a course of action

- Qualifying responses and acknowledging the need
  for additional information in making an absolute
  determination

Assessing Writing

## Interest

How well does the student maintain the reader's interest?

Does the...

- Student use creative and engaging examples or descriptions
- Structure, syntax and organization add to the interest of their writing
- Student use colorful but relevant metaphors, similes, etc.
- Writing engage the reader
- Writing leave the reader thinking

## Presentation

How clear and concise is the argument? Does the student...

- Clearly articulate the argument and the context for that argument
- Correctly and precisely use evidence to defend the argument
- Comprehensibly and coherently present evidence

## Development

How effective is the structure? Does the student...

- Logically and cohesively organize the argument
- Avoid extraneous elements in the argument's development
- Present evidence in an order that contributes to a persuasive and coherent argument

## Persuasiveness

How well does the student defend the argument? Does the student...

- Effectively present evidence in support of the argument
- Draw thoroughly and extensively from the available range of evidence
- Analyze the evidence in addition to simply presenting it
- Consider counterarguments and address weaknesses in his/her own argument

## Mechanics

What is the quality of the student's writing?

- Is vocabulary and punctuation used correctly
- Is the student's understanding of grammar strong
- Is the sentence structure basic, or more complex and creative
- Does the student use proper transitions
- Are the paragraphs structured logically and effectively

## Score Sheet

There are two types of items that appear on a CLA score sheet: analytic and holistic. Analytic scoring items are particular to each prompt and holistic items refer to general dimensions, such as evaluation of evidence, drawing conclusions, acknowledging alternative explanations and viewpoints, and overall writing. We compute raw scores for each task by adding up all points on all items (i.e., calculating a unit-weighted sum).

Performance Task scoring is tailored to each specific prompt and includes a combination of both holistic and analytic scoring items. Though there are many types of analytic items on the Performance Task score sheets, the most common represent a list of the possible pieces of information a student could or should raise in their response. These cover the information presented in the Performance Task documents as well as information that can be deduced from comparing information across documents. The analytic items are generally given a score of 0 if the student did not use the information in their response, or 1 if they did. The number of analytic items varies by prompt.

Performance Task holistic items are scored on four or seven-point scales (i.e., 1-4 or 1-7). There are multiple holistic items per Performance Task that require graders to provide an evaluation of different aspects of critical thinking and reasoning in the student responses. These holistic items include areas such as the student's use of the most relevant information in the Performance Task, their recognition of strengths and weaknesses of various pieces of information, overall critical thinking, and overall writing.

Critique-an-Argument score sheets also include a combination of analytic and holistic scores. Critique-an-Argument analytic items are a list of possible critiques of the argument presented in the prompt. In addition, a few holistic items are used to rate the overall quality, critical thinking and writing over the entire response.

Make-an-Argument score sheets contain only holistic items scored on four or seven-point scales (i.e., 1-4 or 1-7). The holistic items include ratings for various aspects of writing (e.g., organization, mechanics, etc.) and critical thinking (e.g., reasoning and logic, sophistication and depth of treatment of the issues raised in the prompt) as well as two overall assessments of writing and critical thinking.

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 assigned a 0 and are flagged for removal from the school-level results.

## Scoring Procedure

All scorer candidates undergo rigorous training in order to become certified CLA scorers. Training includes an orientation to the prompt and score sheet, instruction on how to evaluate the scoring items, repeated practice grading a wide range of student responses, and extensive feedback and discussion after scoring each response.

After participating in training, scorers complete a reliability check where they score the same set of student responses. Scorers with low agreement or reliability (determined by comparisons of raw score means, standard deviations and correlations among the scorers) are either further coached or removed from scoring.

In fall 2009 and spring 2010, a combination of automated and human scoring was used for the Analytic Writing Task.

The CLA utilizes Pearson Knowledge Technology's Intelligent Essay Assessor program for evaluating responses to the Make-an-Argument and Critique-an-Argument prompts.

The automated scoring engine was developed and tested using scores from a broad range of responses that were previously scored by humans. In some cases the automated scoring engine is unable to score off-topic or abnormally short/long responses. These student responses are scored by certified CLA scorers.

To facilitate reporting results across schools, ACT scores were 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 were 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

Each Performance Task and Analytic Writing Task has a unique scoring rubric, and the maximum number of reader-assigned raw score points differs across tasks. Consequently, a given reader-assigned raw score, such as 15 points, may be a relatively high score on one task but a low score on another task.

To adjust for such differences, reader-assigned raw scores on 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 scores 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 reader-assigned raw scores to scale scores. This process results in a scale score distribution with the same mean and standard deviation as the Entering Academic Ability (EAA) scores of the 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 generally results in the highest raw score earned on a task receiving a scale score of approximately the same value as the maximum EAA score of any freshman who took that task. Similarly, the lowest raw score earned on a task would be assigned a scale score value that is approximately

the same as the lowest EAA score of any freshman who took that task. On very rare occasions, a student may achieve an exceptionally high or low raw score (i.e., well above or below the other students taking that task). When this occurs, it results in assigning a student a scale score that is outside of the normal EAA range. Prior to the spring of 2007, scores were capped at 1600. Capping was discontinued starting in fall 2007.

In the past, CAE revised its scaling equations each fall. However, many institutions would like to make year-to-year comparisons (i.e., as opposed to just fall to spring). To facilitate this activity, in fall 2007 CAE began using the same scaling equations it developed for the fall 2006 administration and has done so for new tasks introduced since then. As a result of this policy, a given raw score on a task will receive the same scale score regardless of when the student took the task.

## 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

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

where $\overline{CLA}_{\text{fr},j}$ 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 the new 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. Second, 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 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 we repeated testing 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 $j$.

- $\beta_{0j}$ is the student-level intercept (equal to the mean CLA score at school $j$).

- $\beta_{1j}$ 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 $\sigma^2$ is the variance of the student-level residuals (the pooled within-school variance of CLA scores after controlling for EAA).

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

- $\overline{CLA}_{\text{fr},j}$ is the mean freshman CLA score at school $j$.

- $\gamma_{00}$ is the school-level value-added equation intercept.

- $\gamma_{01}$ is the school-level value-added equation slope coefficient for senior mean EAA.

- $\gamma_{02}$ is the school-level value-added equation slope coefficient for freshman mean CLA.

- $\gamma_{10}$ 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 $\tau_{00}$ 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):**

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

## Estimated Parameters for Value-Added Model

|  | $\gamma_{00}$ | $\gamma_{10}$ | $\gamma_{01}$ | $\gamma_{02}$ |
|---|---|---|---|---|
| Total Score | 333.16 | 0.45 | 0.41 | 0.39 |
| Performance Task | 344.00 | 0.46 | 0.41 | 0.35 |
| Analytic Writing Task | 349.70 | 0.43 | 0.40 | 0.40 |
| Make-an-Argument | 357.68 | 0.42 | 0.40 | 0.38 |
| Critique-an-Argument | 340.14 | 0.45 | 0.43 | 0.40 |

The table above shows the estimated parameters for the value-added model. Using these estimated parameters and 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 a subgroup analysis.

## Freshman CLA Scores, 50th-99th Percentiles

| Percentile | Total CLA Score | Performance Task | Analytic Writing Task | Make-an-Argument | Critique-an-Argument | EAA |
|---|---|---|---|---|---|---|
| 99 | 1376 | 1350 | 1407 | 1414 | 1420 | 1445 |
| 98 | 1295 | 1273 | 1332 | 1343 | 1334 | 1298 |
| 97 | 1277 | 1226 | 1317 | 1329 | 1316 | 1280 |
| 96 | 1253 | 1222 | 1306 | 1304 | 1291 | 1266 |
| 95 | 1251 | 1219 | 1289 | 1279 | 1276 | 1248 |
| 94 | 1235 | 1215 | 1266 | 1262 | 1272 | 1245 |
| 93 | 1228 | 1205 | 1257 | 1257 | 1271 | 1235 |
| 92 | 1219 | 1203 | 1249 | 1256 | 1247 | 1220 |
| 91 | 1216 | 1197 | 1248 | 1256 | 1244 | 1215 |
| 90 | 1209 | 1191 | 1242 | 1255 | 1240 | 1203 |
| 89 | 1205 | 1183 | 1237 | 1252 | 1232 | 1201 |
| 88 | 1197 | 1175 | 1227 | 1251 | 1220 | 1195 |
| 87 | 1196 | 1174 | 1222 | 1239 | 1214 | 1189 |
| 86 | 1185 | 1170 | 1218 | 1233 | 1203 | 1177 |
| 85 | 1184 | 1164 | 1215 | 1229 | 1202 | 1167 |
| 84 | 1184 | 1161 | 1214 | 1222 | 1201 | 1156 |
| 83 | 1183 | 1155 | 1212 | 1215 | 1200 | 1153 |
| 82 | 1179 | 1147 | 1207 | 1209 | 1195 | 1151 |
| 81 | 1176 | 1144 | 1206 | 1208 | 1194 | 1150 |
| 80 | 1173 | 1141 | 1204 | 1207 | 1191 | 1148 |
| 79 | 1172 | 1137 | 1197 | 1204 | 1190 | 1142 |
| 78 | 1160 | 1132 | 1192 | 1203 | 1189 | 1137 |
| 77 | 1158 | 1131 | 1191 | 1202 | 1184 | 1135 |
| 76 | 1157 | 1130 | 1188 | 1201 | 1179 | 1131 |
| 75 | 1156 | 1129 | 1186 | 1196 | 1177 | 1124 |
| 74 | 1155 | 1126 | 1182 | 1194 | 1175 | 1123 |
| 73 | 1153 | 1122 | 1180 | 1192 | 1174 | 1122 |
| 72 | 1150 | 1121 | 1179 | 1190 | 1170 | 1117 |
| 71 | 1149 | 1120 | 1178 | 1185 | 1168 | 1114 |
| 70 | 1142 | 1113 | 1176 | 1180 | 1162 | 1111 |
| 69 | 1140 | 1112 | 1171 | 1177 | 1161 | 1107 |
| 68 | 1137 | 1111 | 1168 | 1174 | 1160 | 1099 |
| 67 | 1133 | 1110 | 1165 | 1168 | 1159 | 1098 |
| 66 | 1129 | 1102 | 1160 | 1166 | 1153 | 1095 |
| 65 | 1128 | 1101 | 1157 | 1163 | 1152 | 1093 |
| 64 | 1121 | 1096 | 1150 | 1158 | 1148 | 1091 |
| 63 | 1120 | 1095 | 1149 | 1157 | 1139 | 1087 |
| 62 | 1115 | 1094 | 1148 | 1153 | 1138 | 1084 |
| 61 | 1112 | 1093 | 1145 | 1152 | 1134 | 1082 |
| 60 | 1111 | 1090 | 1142 | 1140 | 1130 | 1078 |
| 59 | 1109 | 1087 | 1140 | 1139 | 1128 | 1077 |
| 58 | 1108 | 1084 | 1129 | 1134 | 1125 | 1067 |
| 57 | 1105 | 1083 | 1127 | 1133 | 1124 | 1064 |
| 56 | 1102 | 1078 | 1120 | 1130 | 1122 | 1057 |
| 55 | 1101 | 1077 | 1119 | 1127 | 1115 | 1056 |
| 54 | 1100 | 1075 | 1117 | 1125 | 1110 | 1048 |
| 53 | 1098 | 1072 | 1116 | 1124 | 1109 | 1046 |
| 52 | 1093 | 1069 | 1115 | 1119 | 1100 | 1044 |
| 51 | 1091 | 1068 | 1109 | 1117 | 1098 | 1043 |
| 50 | 1089 | 1067 | 1108 | 1115 | 1096 | 1041 |

## H.2 Freshman CLA Scores, 1st-49th Percentiles

| Percentile | Total CLA Score | Performance Task | Analytic Writing Task | Make-an-Argument | Critique-an-Argument | EAA |
|---|---|---|---|---|---|---|
| 49 | 1087 | 1064 | 1103 | 1112 | 1092 | 1038 |
| 48 | 1082 | 1063 | 1100 | 1111 | 1091 | 1036 |
| 47 | 1081 | 1061 | 1098 | 1109 | 1090 | 1035 |
| 46 | 1080 | 1060 | 1097 | 1108 | 1089 | 1034 |
| 45 | 1076 | 1059 | 1093 | 1106 | 1088 | 1033 |
| 44 | 1070 | 1054 | 1091 | 1105 | 1086 | 1030 |
| 43 | 1068 | 1053 | 1090 | 1101 | 1083 | 1029 |
| 42 | 1066 | 1052 | 1089 | 1095 | 1081 | 1027 |
| 41 | 1062 | 1051 | 1088 | 1091 | 1078 | 1023 |
| 40 | 1061 | 1050 | 1086 | 1088 | 1075 | 1021 |
| 39 | 1059 | 1050 | 1084 | 1084 | 1072 | 1019 |
| 38 | 1058 | 1049 | 1082 | 1080 | 1070 | 1013 |
| 37 | 1058 | 1048 | 1071 | 1077 | 1069 | 1010 |
| 36 | 1057 | 1045 | 1069 | 1075 | 1066 | 1009 |
| 35 | 1052 | 1036 | 1066 | 1072 | 1064 | 1002 |
| 34 | 1051 | 1035 | 1065 | 1071 | 1062 | 1001 |
| 33 | 1050 | 1032 | 1064 | 1067 | 1057 | 1000 |
| 32 | 1049 | 1028 | 1063 | 1066 | 1055 | 999 |
| 31 | 1048 | 1026 | 1060 | 1065 | 1053 | 997 |
| 30 | 1045 | 1025 | 1059 | 1064 | 1052 | 996 |
| 29 | 1044 | 1023 | 1058 | 1063 | 1050 | 990 |
| 28 | 1043 | 1021 | 1054 | 1061 | 1048 | 988 |
| 27 | 1041 | 1019 | 1053 | 1060 | 1047 | 984 |
| 26 | 1038 | 1014 | 1051 | 1059 | 1042 | 981 |
| 25 | 1033 | 1010 | 1050 | 1056 | 1040 | 979 |
| 24 | 1032 | 1009 | 1049 | 1049 | 1039 | 974 |
| 23 | 1025 | 1007 | 1047 | 1042 | 1037 | 968 |
| 22 | 1021 | 1003 | 1045 | 1041 | 1036 | 967 |
| 21 | 1019 | 1000 | 1043 | 1040 | 1035 | 962 |
| 20 | 1017 | 999 | 1042 | 1039 | 1034 | 961 |
| 19 | 1015 | 997 | 1041 | 1035 | 1033 | 959 |
| 18 | 1014 | 996 | 1039 | 1032 | 1032 | 957 |
| 17 | 1012 | 993 | 1034 | 1030 | 1031 | 950 |
| 16 | 1012 | 992 | 1030 | 1027 | 1030 | 949 |
| 15 | 1011 | 989 | 1026 | 1026 | 1022 | 946 |
| 14 | 1007 | 988 | 1021 | 1023 | 1021 | 934 |
| 13 | 1006 | 987 | 1014 | 1003 | 1021 | 931 |
| 12 | 1002 | 983 | 1009 | 998 | 1020 | 929 |
| 11 | 998 | 975 | 995 | 971 | 1010 | 925 |
| 10 | 997 | 972 | 987 | 970 | 1007 | 922 |
| 9 | 970 | 962 | 976 | 959 | 983 | 916 |
| 8 | 966 | 960 | 971 | 946 | 981 | 911 |
| 7 | 952 | 956 | 954 | 934 | 964 | 907 |
| 6 | 947 | 936 | 948 | 931 | 962 | 903 |
| 5 | 929 | 925 | 940 | 928 | 956 | 886 |
| 4 | 924 | 910 | 934 | 916 | 953 | 884 |
| 3 | 913 | 901 | 923 | 901 | 947 | 862 |
| 2 | 910 | 894 | 922 | 893 | 944 | 857 |
| 1 | 884 | 861 | 911 | 877 | 915 | 780 |

## 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 | 1406 | 1394 | 1457 | 1447 | 1488 | 1462 |
| 98 | 1375 | 1355 | 1395 | 1403 | 1406 | 1310 |
| 97 | 1365 | 1347 | 1394 | 1386 | 1404 | 1306 |
| 96 | 1357 | 1331 | 1381 | 1383 | 1396 | 1280 |
| 95 | 1340 | 1316 | 1379 | 1363 | 1388 | 1259 |
| 94 | 1328 | 1310 | 1369 | 1361 | 1380 | 1257 |
| 93 | 1316 | 1289 | 1358 | 1352 | 1371 | 1246 |
| 92 | 1313 | 1281 | 1353 | 1348 | 1366 | 1222 |
| 91 | 1305 | 1272 | 1352 | 1344 | 1364 | 1217 |
| 90 | 1300 | 1268 | 1350 | 1341 | 1358 | 1212 |
| 89 | 1299 | 1261 | 1348 | 1340 | 1356 | 1210 |
| 88 | 1298 | 1257 | 1346 | 1333 | 1354 | 1199 |
| 87 | 1297 | 1256 | 1343 | 1332 | 1353 | 1191 |
| 86 | 1295 | 1249 | 1337 | 1322 | 1348 | 1188 |
| 85 | 1293 | 1245 | 1335 | 1320 | 1344 | 1183 |
| 84 | 1282 | 1242 | 1333 | 1319 | 1342 | 1176 |
| 83 | 1280 | 1236 | 1321 | 1312 | 1337 | 1171 |
| 82 | 1279 | 1235 | 1316 | 1303 | 1334 | 1167 |
| 81 | 1273 | 1230 | 1312 | 1299 | 1328 | 1164 |
| 80 | 1270 | 1222 | 1310 | 1293 | 1321 | 1152 |
| 79 | 1269 | 1220 | 1305 | 1291 | 1317 | 1149 |
| 78 | 1260 | 1218 | 1297 | 1289 | 1316 | 1148 |
| 77 | 1259 | 1212 | 1293 | 1286 | 1313 | 1145 |
| 76 | 1257 | 1210 | 1289 | 1281 | 1307 | 1140 |
| 75 | 1255 | 1205 | 1287 | 1280 | 1302 | 1130 |
| 74 | 1254 | 1204 | 1286 | 1278 | 1298 | 1129 |
| 73 | 1242 | 1203 | 1285 | 1278 | 1296 | 1128 |
| 72 | 1240 | 1201 | 1284 | 1277 | 1294 | 1124 |
| 71 | 1238 | 1199 | 1283 | 1276 | 1289 | 1120 |
| 70 | 1237 | 1197 | 1282 | 1275 | 1287 | 1110 |
| 69 | 1236 | 1196 | 1281 | 1272 | 1287 | 1108 |
| 68 | 1231 | 1195 | 1279 | 1271 | 1286 | 1102 |
| 67 | 1230 | 1194 | 1278 | 1265 | 1285 | 1100 |
| 66 | 1230 | 1191 | 1276 | 1263 | 1284 | 1098 |
| 65 | 1229 | 1187 | 1273 | 1262 | 1283 | 1097 |
| 64 | 1228 | 1182 | 1272 | 1261 | 1282 | 1094 |
| 63 | 1221 | 1181 | 1267 | 1254 | 1281 | 1092 |
| 62 | 1214 | 1180 | 1263 | 1253 | 1280 | 1091 |
| 61 | 1212 | 1178 | 1262 | 1251 | 1278 | 1088 |
| 60 | 1211 | 1177 | 1259 | 1246 | 1274 | 1087 |
| 59 | 1210 | 1174 | 1258 | 1245 | 1270 | 1086 |
| 58 | 1208 | 1172 | 1257 | 1243 | 1268 | 1083 |
| 57 | 1207 | 1170 | 1252 | 1240 | 1266 | 1081 |
| 56 | 1206 | 1169 | 1251 | 1234 | 1263 | 1080 |
| 55 | 1203 | 1167 | 1248 | 1228 | 1259 | 1078 |
| 54 | 1202 | 1166 | 1246 | 1226 | 1258 | 1077 |
| 53 | 1200 | 1164 | 1241 | 1225 | 1257 | 1071 |
| 52 | 1200 | 1163 | 1239 | 1224 | 1254 | 1068 |
| 51 | 1199 | 1162 | 1237 | 1223 | 1247 | 1067 |
| 50 | 1196 | 1159 | 1233 | 1218 | 1241 | 1066 |

## H.4 Senior CLA Scores, 1st-49th Percentiles

| Percentile | Total CLA Score | Performance Task | Analytic Writing Task | Make-an-Argument | Critique-an-Argument | EAA |
|---|---|---|---|---|---|---|
| 49 | 1194 | 1158 | 1231 | 1217 | 1240 | 1065 |
| 48 | 1191 | 1157 | 1228 | 1215 | 1238 | 1061 |
| 47 | 1186 | 1155 | 1226 | 1212 | 1233 | 1058 |
| 46 | 1184 | 1152 | 1225 | 1207 | 1231 | 1057 |
| 45 | 1183 | 1148 | 1217 | 1205 | 1227 | 1055 |
| 44 | 1182 | 1146 | 1214 | 1205 | 1224 | 1053 |
| 43 | 1182 | 1144 | 1213 | 1204 | 1220 | 1052 |
| 42 | 1181 | 1143 | 1210 | 1201 | 1217 | 1051 |
| 41 | 1176 | 1142 | 1206 | 1197 | 1214 | 1045 |
| 40 | 1171 | 1140 | 1202 | 1194 | 1208 | 1034 |
| 39 | 1167 | 1138 | 1200 | 1191 | 1204 | 1033 |
| 38 | 1165 | 1137 | 1194 | 1189 | 1199 | 1030 |
| 37 | 1161 | 1134 | 1192 | 1187 | 1197 | 1027 |
| 36 | 1160 | 1133 | 1191 | 1181 | 1189 | 1026 |
| 35 | 1159 | 1129 | 1190 | 1178 | 1186 | 1024 |
| 34 | 1158 | 1128 | 1187 | 1178 | 1185 | 1022 |
| 33 | 1156 | 1124 | 1182 | 1177 | 1184 | 1014 |
| 32 | 1155 | 1123 | 1180 | 1176 | 1183 | 1013 |
| 31 | 1153 | 1120 | 1177 | 1172 | 1181 | 1012 |
| 30 | 1148 | 1118 | 1174 | 1167 | 1176 | 1007 |
| 29 | 1147 | 1117 | 1173 | 1164 | 1173 | 1007 |
| 28 | 1142 | 1116 | 1170 | 1160 | 1171 | 1006 |
| 27 | 1141 | 1116 | 1166 | 1160 | 1169 | 1005 |
| 26 | 1134 | 1115 | 1163 | 1159 | 1166 | 1003 |
| 25 | 1133 | 1114 | 1155 | 1155 | 1164 | 994 |
| 24 | 1132 | 1113 | 1151 | 1154 | 1160 | 994 |
| 23 | 1131 | 1106 | 1150 | 1153 | 1155 | 993 |
| 22 | 1130 | 1105 | 1149 | 1141 | 1154 | 992 |
| 21 | 1123 | 1103 | 1148 | 1135 | 1152 | 990 |
| 20 | 1109 | 1093 | 1144 | 1130 | 1151 | 986 |
| 19 | 1107 | 1088 | 1143 | 1128 | 1149 | 985 |
| 18 | 1106 | 1083 | 1133 | 1125 | 1144 | 983 |
| 17 | 1104 | 1077 | 1132 | 1123 | 1137 | 983 |
| 16 | 1103 | 1074 | 1131 | 1120 | 1136 | 982 |
| 15 | 1097 | 1065 | 1127 | 1117 | 1134 | 976 |
| 14 | 1094 | 1063 | 1126 | 1116 | 1133 | 975 |
| 13 | 1093 | 1061 | 1124 | 1114 | 1120 | 965 |
| 12 | 1093 | 1059 | 1121 | 1111 | 1118 | 962 |
| 11 | 1092 | 1056 | 1108 | 1107 | 1112 | 957 |
| 10 | 1080 | 1053 | 1103 | 1097 | 1102 | 951 |
| 9 | 1079 | 1052 | 1101 | 1080 | 1101 | 950 |
| 8 | 1073 | 1015 | 1100 | 1070 | 1099 | 943 |
| 7 | 1068 | 1011 | 1093 | 1063 | 1096 | 926 |
| 6 | 1055 | 995 | 1079 | 1060 | 1086 | 924 |
| 5 | 1021 | 972 | 1067 | 1051 | 1067 | 914 |
| 4 | 1011 | 966 | 1057 | 1037 | 1066 | 892 |
| 3 | 995 | 961 | 1020 | 1002 | 1042 | 886 |
| 2 | 980 | 957 | 1011 | 997 | 1037 | 884 |
| 1 | 947 | 921 | 974 | 911 | 992 | 786 |

## Value-Added Scores, 50th-99th Percentiles

H.5

| Percentile | Total CLA Score | Performance Task | Analytic Writing Task | Make-an-Argument | Critique-an-Argument |
|---|---|---|---|---|---|
| 99 | 4.34 | 4.48 | 3.20 | 2.73 | 3.21 |
| 98 | 1.98 | 2.19 | 1.78 | 1.97 | 2.02 |
| 97 | 1.84 | 1.97 | 1.76 | 1.70 | 1.73 |
| 96 | 1.50 | 1.75 | 1.53 | 1.59 | 1.46 |
| 95 | 1.35 | 1.69 | 1.52 | 1.52 | 1.40 |
| 94 | 1.29 | 1.44 | 1.47 | 1.44 | 1.35 |
| 93 | 1.28 | 1.40 | 1.43 | 1.40 | 1.31 |
| 92 | 1.23 | 1.20 | 1.34 | 1.36 | 1.29 |
| 91 | 1.17 | 1.17 | 1.28 | 1.35 | 1.25 |
| 90 | 1.15 | 1.09 | 1.21 | 1.10 | 1.22 |
| 89 | 1.12 | 1.04 | 1.16 | 1.09 | 1.22 |
| 88 | 1.10 | 1.03 | 1.10 | 1.09 | 1.15 |
| 87 | 1.09 | 1.01 | 1.09 | 1.08 | 1.15 |
| 86 | 1.03 | 0.98 | 1.02 | 1.02 | 1.08 |
| 85 | 0.98 | 0.94 | 0.99 | 1.02 | 1.06 |
| 84 | 0.92 | 0.92 | 0.88 | 1.00 | 1.00 |
| 83 | 0.91 | 0.85 | 0.87 | 0.99 | 0.92 |
| 82 | 0.90 | 0.83 | 0.86 | 0.98 | 0.87 |
| 81 | 0.89 | 0.82 | 0.84 | 0.90 | 0.87 |
| 80 | 0.81 | 0.80 | 0.84 | 0.89 | 0.84 |
| 79 | 0.80 | 0.80 | 0.82 | 0.85 | 0.83 |
| 78 | 0.79 | 0.76 | 0.80 | 0.83 | 0.80 |
| 77 | 0.78 | 0.74 | 0.79 | 0.82 | 0.78 |
| 76 | 0.76 | 0.72 | 0.74 | 0.79 | 0.70 |
| 75 | 0.75 | 0.71 | 0.73 | 0.78 | 0.70 |
| 74 | 0.67 | 0.68 | 0.66 | 0.71 | 0.68 |
| 73 | 0.65 | 0.65 | 0.65 | 0.67 | 0.68 |
| 72 | 0.63 | 0.54 | 0.64 | 0.61 | 0.61 |
| 71 | 0.63 | 0.53 | 0.64 | 0.57 | 0.61 |
| 70 | 0.56 | 0.48 | 0.54 | 0.51 | 0.57 |
| 69 | 0.54 | 0.43 | 0.51 | 0.49 | 0.56 |
| 68 | 0.53 | 0.38 | 0.50 | 0.48 | 0.50 |
| 67 | 0.52 | 0.38 | 0.49 | 0.47 | 0.47 |
| 66 | 0.45 | 0.34 | 0.46 | 0.46 | 0.45 |
| 65 | 0.44 | 0.33 | 0.46 | 0.45 | 0.44 |
| 64 | 0.42 | 0.29 | 0.41 | 0.43 | 0.43 |
| 63 | 0.42 | 0.28 | 0.41 | 0.42 | 0.41 |
| 62 | 0.42 | 0.27 | 0.40 | 0.41 | 0.34 |
| 61 | 0.37 | 0.26 | 0.38 | 0.38 | 0.28 |
| 60 | 0.36 | 0.24 | 0.35 | 0.31 | 0.27 |
| 59 | 0.32 | 0.24 | 0.34 | 0.30 | 0.24 |
| 58 | 0.25 | 0.22 | 0.28 | 0.27 | 0.18 |
| 57 | 0.17 | 0.21 | 0.28 | 0.26 | 0.15 |
| 56 | 0.14 | 0.20 | 0.26 | 0.24 | 0.13 |
| 55 | 0.14 | 0.19 | 0.25 | 0.23 | 0.13 |
| 54 | 0.08 | 0.18 | 0.21 | 0.20 | 0.12 |
| 53 | 0.07 | 0.18 | 0.17 | 0.18 | 0.10 |
| 52 | 0.05 | 0.15 | 0.12 | 0.14 | 0.07 |
| 51 | 0.04 | 0.13 | 0.10 | 0.12 | 0.05 |
| 50 | 0.03 | 0.11 | 0.08 | 0.06 | 0.02 |

## H.6 Value-Added Scores, 1st-49th Percentiles

| Percentile | Total CLA Score | Performance Task | Analytic Writing Task | Make-an-Argument | Critique-an-Argument |
|---|---|---|---|---|---|
| 49 | -0.03 | 0.08 | 0.06 | 0.03 | 0.00 |
| 48 | -0.04 | 0.06 | 0.05 | 0.03 | 0.00 |
| 47 | -0.05 | 0.04 | 0.02 | 0.00 | -0.02 |
| 46 | -0.05 | 0.04 | -0.01 | -0.03 | -0.05 |
| 45 | -0.10 | -0.02 | -0.05 | -0.06 | -0.05 |
| 44 | -0.12 | -0.08 | -0.07 | -0.10 | -0.07 |
| 43 | -0.12 | -0.09 | -0.16 | -0.11 | -0.10 |
| 42 | -0.15 | -0.11 | -0.17 | -0.11 | -0.13 |
| 41 | -0.22 | -0.12 | -0.20 | -0.12 | -0.23 |
| 40 | -0.23 | -0.13 | -0.20 | -0.12 | -0.24 |
| 39 | -0.28 | -0.14 | -0.22 | -0.13 | -0.27 |
| 38 | -0.29 | -0.20 | -0.23 | -0.14 | -0.28 |
| 37 | -0.30 | -0.21 | -0.28 | -0.16 | -0.34 |
| 36 | -0.30 | -0.22 | -0.31 | -0.17 | -0.38 |
| 35 | -0.32 | -0.28 | -0.34 | -0.19 | -0.38 |
| 34 | -0.35 | -0.29 | -0.40 | -0.22 | -0.39 |
| 33 | -0.36 | -0.32 | -0.44 | -0.25 | -0.39 |
| 32 | -0.38 | -0.36 | -0.44 | -0.31 | -0.42 |
| 31 | -0.38 | -0.41 | -0.47 | -0.50 | -0.47 |
| 30 | -0.39 | -0.43 | -0.48 | -0.50 | -0.52 |
| 29 | -0.42 | -0.50 | -0.57 | -0.52 | -0.56 |
| 28 | -0.43 | -0.51 | -0.59 | -0.54 | -0.61 |
| 27 | -0.49 | -0.52 | -0.61 | -0.56 | -0.63 |
| 26 | -0.50 | -0.52 | -0.67 | -0.58 | -0.64 |
| 25 | -0.56 | -0.54 | -0.67 | -0.60 | -0.71 |
| 24 | -0.59 | -0.56 | -0.68 | -0.61 | -0.72 |
| 23 | -0.61 | -0.62 | -0.73 | -0.65 | -0.77 |
| 22 | -0.61 | -0.67 | -0.76 | -0.65 | -0.78 |
| 21 | -0.67 | -0.70 | -0.78 | -0.71 | -0.84 |
| 20 | -0.71 | -0.72 | -0.79 | -0.74 | -0.90 |
| 19 | -0.80 | -0.75 | -0.80 | -0.81 | -0.96 |
| 18 | -0.81 | -0.75 | -0.80 | -0.81 | -0.97 |
| 17 | -0.87 | -0.80 | -0.83 | -0.88 | -1.04 |
| 16 | -0.91 | -0.86 | -0.85 | -0.91 | -1.06 |
| 15 | -0.93 | -0.97 | -0.93 | -0.98 | -1.11 |
| 14 | -0.97 | -0.98 | -0.96 | -1.02 | -1.11 |
| 13 | -1.04 | -1.03 | -1.05 | -1.06 | -1.17 |
| 12 | -1.04 | -1.09 | -1.06 | -1.11 | -1.17 |
| 11 | -1.08 | -1.16 | -1.16 | -1.16 | -1.22 |
| 10 | -1.19 | -1.25 | -1.19 | -1.17 | -1.23 |
| 9 | -1.23 | -1.29 | -1.30 | -1.28 | -1.25 |
| 8 | -1.42 | -1.36 | -1.36 | -1.32 | -1.38 |
| 7 | -1.47 | -1.58 | -1.69 | -1.49 | -1.46 |
| 6 | -1.52 | -1.68 | -1.69 | -1.49 | -1.55 |
| 5 | -1.70 | -1.74 | -1.91 | -1.76 | -1.62 |
| 4 | -1.72 | -1.77 | -2.10 | -1.90 | -1.69 |
| 3 | -2.11 | -2.09 | -2.12 | -2.26 | -1.84 |
| 2 | -2.36 | -2.10 | -2.22 | -2.31 | -1.92 |
| 1 | -2.75 | -2.47 | -2.83 | -3.62 | -2.98 |

In tandem with this report, we provide a CLA Student Data File, which includes variables across three categories: self-reported information from students in their CLA on-line profile; CLA scores and identifiers; and information provided/verified 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 campus-specific factors related to overall 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.

## Self-Reported Data

- Date of birth

- Gender

- Race/Ethnicity

- Parent Education

- Primary and Secondary Academic Major (36 categories)

- Field of Study (6 categories; based on primary academic major)

- English as primary language

- Attended school as Freshman, Sophomore, Junior, Senior

- Local survey responses

## CLA Scores and Identifiers

- CLA scores for Performance Task, Analytic Writing Task, Make-an-Argument, and Critique-an-Argument (depending on the tasks taken and completeness of responses):

  - CLA scores

  - Student Performance Level categories (i.e., well below expected, below expected, near expected, above expected, well above expected) if CLA score and entering academic ability (EAA) score are available

  - Percentile Rank across schools (among students in the same class year, based on score)

  - Percentile Rank within your school (among students in the same class year, based on score)

- SLE score (if applicable)

- Entering Academic Ability (EAA) score

- Unique CLA numeric identifiers

- Name (first, middle initial, last), E-mail address, Student ID

- 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, majors, programs, etc., if applicable)

- SAT Total (Math + Verbal)

- SAT I - Math

- SAT I - Verbal / Critical Reading

- SAT I - Writing

- ACT - Composite

- GPA

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