CWRA

Sample High School

2009-2010 CWRA INSTITUTIONAL REPORT

Your 2009-2010 Results consist of two components:

- CWRA Institutional Report and Appendices
- CWRA Student Data File

Report

The report introduces readers to the CWRA, its methodology, presents your results, and offers guidance on interpretation and next steps.

Appendices

Appendices offer more detail on the CWRA Performance Task, scoring and scaling, 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 College and Work Readiness Assessment (CWRA) offers an authentic approach to assessment and improvement of teaching and learning in secondary education. Over 60 schools and 25,000 students have participated to date. Growing commitment on the part of secondary education to assess student learning makes this a good time to review the distinguishing features of the CWRA and how it connects to improving teaching and learning at your school.

The CWRA is intended primarily to assist faculty, school administrators, and others interested in programmatic change to improve teaching and learning, particularly with respect to strengthening essential higher order skills (critical thinking and written communication).

The CWRA helps schools follow a continuous improvement model that positions faculty as central actors. CLA Education (described on page 20) 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 CWRA because no single test can serve as the benchmark for all student learning in secondary 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 CWRA focuses on fall into this measurable category.

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

The signaling quality of the CWRA 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 schools. Otherwise, how do institutions know how well they are doing?

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

While the CWRA 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 CWRA uses constructed-response tasks and value-added methodology to measure your students' performance in key higher order skills: critical thinking, analytic reasoning, problem solving, and written communication. In the CWRA, higher order skills are measured by the Performance Task, which is one of two task types employed by the CLA (for colleges). Throughout this report, "CWRA scores" and "Performance Task scores" are used interchangeably.

The 2009-2010 CWRA Report presents summary statistics for students tested at your school: numbers of students, mean CWRA and SLE scores, 25th and 75th percentiles within your school, and decile ranks relative to other CWRA schools. These unadjusted decile ranks (for Performance Task and SLE scores) are based on the range of mean scores observed across all high schools participating in the fall 2009 CWRA. Unadjusted scores and decile ranks permit absolute comparisons. Across all 49 participating high schools, we present the mean CWRA and SLE scores, as well as the 25th and 75th percentile scores. We also present the corresponding means and percentiles across the 159 colleges and universities that tested freshmen this fall through the Collegiate Learning Assessment (CLA), and which serve as the comparison group for the "college readiness" portion of your report.

In the report, we provide three important perspectives on institutional performance and comparisons, described below.

The first perspective, "college readiness," compares the performance of your seniors, as a group, to the performance of freshmen tested at CLA colleges and universities. Unadjusted scores reflect absolute performance and enable absolute comparisons across schools. Adjusted scores level the playing field for schools with dissimilar incoming student populations or imperfectly representative samples. To adjust scores, we compute an expected CWRA score for your seniors. Expected scores are based on two factors: (a) the estimated entering academic ability of your students (EAA*) and (b) the estimated linear relationship between average Performance Task scores and the average EAA of first-year student samples at CLA colleges and universities.

For the college readiness metric, academic ability is defined by SAT or ACT scores, so as to provide the most direct comparison to the relevant group: college freshmen. Differences between observed and expected scores are reported in standard deviation units. We label these "deviation scores." Mean CWRA scores quantify unadjusted performance and permit absolute comparisons. Deviation scores quantify adjusted performance and enable controlled comparisons. Ranks, both unadjusted and adjusted, are based on the full range of mean CLA scores, or CLA deviation scores, respectively, across all colleges participating in the fall 2009 CLA.

(Continued on next page.)

* SAT Math + Verbal or ACT Composite scores on the SAT scale. Hereinafter referred to as Entering Academic Ability (EAA). SLE scores are not part of EAA.

Deviation scores are placed on a standardized (z-score) scale. Schools that fall between -1.00 and +1.00 are classified as "near expected," between +1.00 and +2.00 as "above expected," between -1.00 and -2.00 as "below expected," above +2.00 as "well above expected," and below -2.00 as "well below expected."

A second perspective on institutional performance is presented through comparisons of high school seniors across participating CWRA schools. As with the college readiness metric, comparisons across high schools involve unadjusted (absolute) and adjusted (controlling for ability) scores. However, unlike the college readiness metric, ability across high schools is measured through the Scholastic Level Exam (SLE). Use of the SLE to calculate expected scores enables the inclusion of high school students who have not taken the SAT or ACT and thereby strengthens the model. Unadjusted decile ranks are based on the full range of mean CWRA scores across institutions testing high school seniors.

Effect sizes provide a third perspective on institutional performance. The effect size is a within-school metric that reflects the estimated performance of your seniors (as well as sophomores and juniors if you tested them) relative to the performance of your freshmen. We subtract the mean CWRA score of freshmen from seniors (or another class) and divide the difference by the freshman standard deviations of CWRA scores at your school. Effect sizes are reported in standard deviation units. For context, we also provide effect sizes relative to CWRA freshmen across all schools.

Moving forward, we will continue to employ methodological enhancements to maximize the precision of our estimates for your institution and elevate the diagnostic value of CWRA results for the improvement of teaching and learning.

3.1 College Readiness: Comparisons to Freshman Samples at CLA Colleges and Universities

	Student Count	Mean EAA Score	Expected Mean CWRA Score	Observed Mean CWRA Score	Unadjusted Percentile Rank	Deviation Score	Adjusted Percentile Rank	Performance Level
Your Seniors	81	1146	1135	1141	80	0.18	54	Near

	School Count	25th Percentile CWRA Score	75th Percentile CWRA Score	Mean CWRA Score
CLA Colleges Testing Freshmen	153	1010	1128	1070

Table 3.1 shows how many seniors completed the CWRA and had Entering Academic Ability (EAA) scores. This table displays the mean EAA scores for your seniors, their expected mean CWRA score based on that mean EAA score, and their observed mean CWRA score. Unadjusted percentile ranks show how your school's mean CWRA scores compare to those of freshmen at undergraduate institutions *before* adjusting for entering ability (as defined by EAA). Deviation scores control for ability (EAA) and quantify the difference between observed and expected mean CWRA scores in standard deviation units. Your adjusted percentile rank and performance level are based on your deviation score.

3.2 Comparisons to Senior Samples at CWRA High Schools

	Student Count	Mean SLE Score	SLE Decile Rank	Expected Mean CWRA Score	Observed Mean CWRA Score	CWRA Decile Rank	Deviation Score	Adjusted Decile Rank
Your Seniors	85	22	5	1071	1123	8	1.01	9

Table 3.2 shows how many seniors completed the CWRA and the Scholastic Level Exam (SLE). It includes students with and without EAA scores. This table displays seniors' mean SLE score and corresponding decile rank, their expected mean CWRA based on that mean SLE score, and their observed mean CWRA score. Unadjusted decile ranks show how your school's mean CWRA score compares to those of senior samples at other CWRA high schools *before* adjusting for ability (as measured by SLE). Deviation scores control for ability (SLE) and quantify the difference between observed and expected mean CWRA scores in standard deviation units. Deciles were computed using the table at right.

Decile	CWRA Score Range	SLE Score Range	Deviation Score Range
1	951 or lower	16 or lower	-1.08 or lower
2	952 to 974	17 to 19	-1.07 to -0.87
3	975 to 1017	20	-0.86 to -0.52
4	1018 to 1062	21	-0.51 to -0.34
5	1063 to 1082	22	-0.33 to -0.05
6	1083 to 1095	23	-0.04 to 0.34
7	1096 to 1122	24	0.35 to 0.63
8	1123 to 1186	25 or 26	0.64 to 1.00
9	1187 to 1229	27	1.01 to 1.26
10	1230 or higher	28 or higher	1.27 or higher

3.3 Effect Sizes and Sample Sizes

A

	Student Count	25th Percentile	75th Percentile	Mean CWRA Score	Standard Deviation	Effect Size vs. Freshmen
Your Seniors	85	1019	1246	1123	200	1.1
Your Juniors	N/A	N/A	N/A	N/A	N/A	N/A
Your Sophomores	N/A	N/A	N/A	N/A	N/A	N/A
Your Freshmen	82	890	1035	979	131	

B

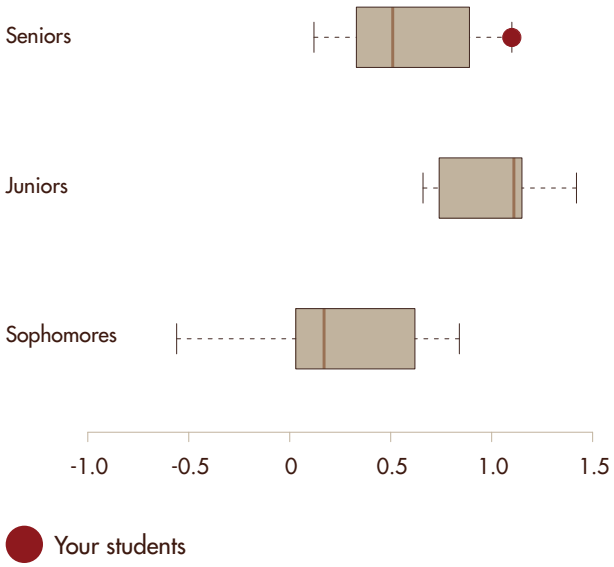
	Student Count	25th Percentile	75th Percentile	Mean CWRA Score	Standard Deviation	Median Effect Size vs. Freshmen
All Seniors	3,322	917	1163	1049	185	0.51
All Juniors	210	968	1196	1083	173	1.11
All Sophomores	129	976	1205	1083	184	0.17
All Freshmen	1,775	907	1153	1031	175	

Results Across Classes

The data in Tables 3.3a and 3.3b include students with and without EAA scores. As a result, these counts and means may differ from those in Table 3.1. Table 3.3a provides results specific to your school, including effect sizes, which reflect the estimated performance of your seniors (as well as sophomores and juniors if you tested them) relative to the performance of your freshmen in standard deviation units. Table 3.3b provides results for students at all participating high schools. (Note that only a small number of schools tested sophomores and juniors.)

Effect Sizes

The "box and whiskers" plot below shows the distributions of effect sizes among all participating high schools. The "box" shows the 25th and 75th percentiles, with the dark vertical bar indicating the median. The "whiskers" show the 5th and 95th percentiles.



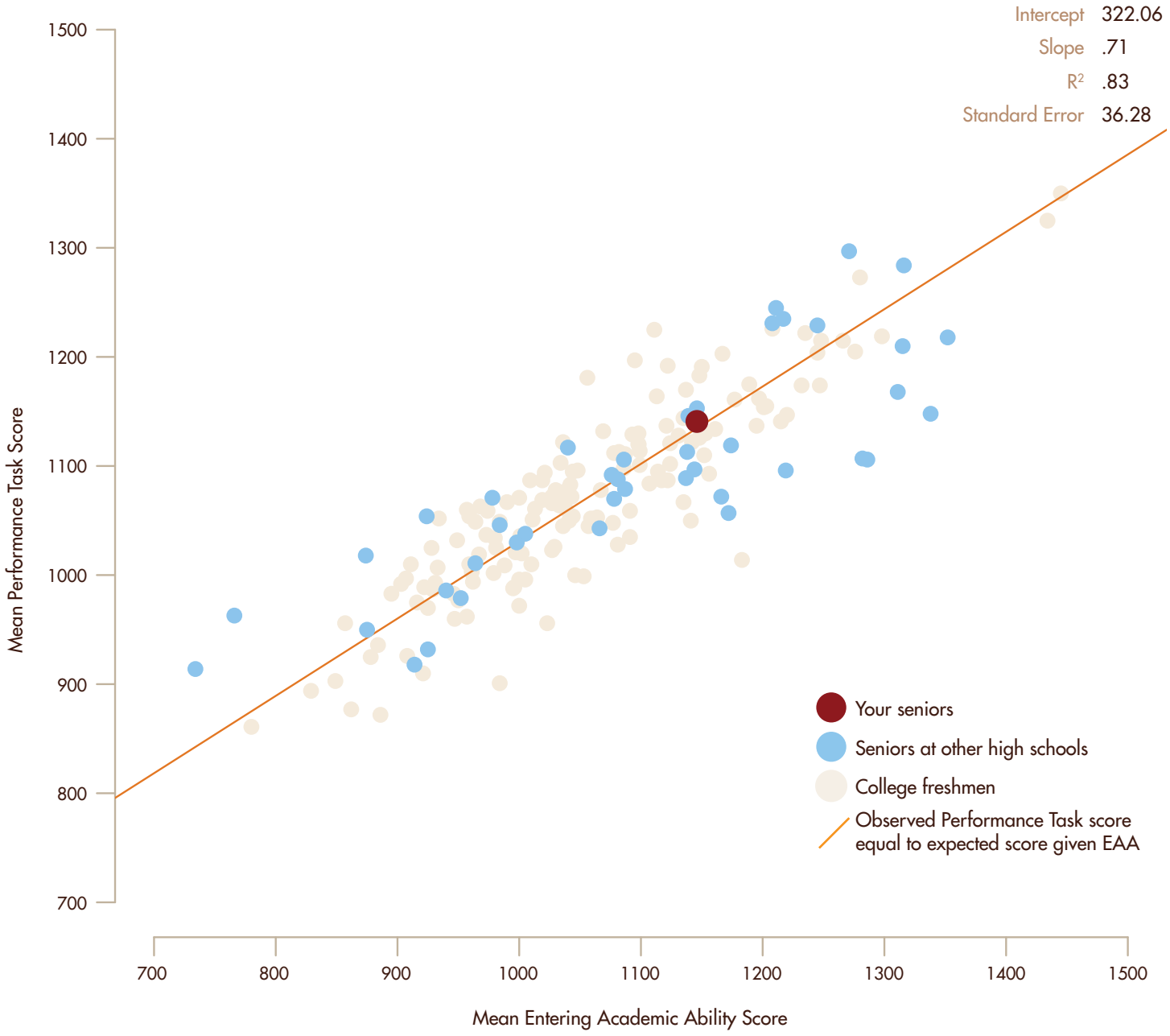
3.4 Student Sample Summary

	Number of Freshmen	Number of Seniors	Freshman Percentage	Senior Percentage	Percentage Difference
Transfer					
Transfer Students	0	12	0	13	13
Non-Transfer Students	82	77	100	87	-13
Gender					
Male	41	40	50	45	-5
Female	41	47	50	53	3
Decline to State	0	2	0	2	2
Primary Language					
English Primary Language	82	83	100	93	-7
Other Primary Language	0	6	0	7	7
Field of Study					
Sciences and Engineering	7	14	9	16	7
Social Sciences	1	13	1	15	14
Humanities and Languages	6	15	7	17	10
Business	3	15	4	17	13
Helping / Services	11	15	13	17	4
Undecided / Other / N/A	54	17	66	19	-47
Race / Ethnicity					
American Indian / Alaska Native	6	4	7	4	-3
Asian / Pacific Islander	4	7	5	8	3
Black, Non-Hispanic	7	6	9	7	-2
Hispanic	1	1	1	1	0
White, Non-Hispanic	60	66	73	74	1
Other	2	2	2	2	0
Decline to State	2	3	2	3	1
Parent Education					
Less than High School	1	1	1	1	0
High School	4	5	5	6	1
Some College	10	7	12	8	-4
Bachelor's Degree	33	28	40	31	-9
Graduate or Professional Degree	34	48	41	54	13

Performance Compared to Other Institutions

Figure 3.5 shows the performance of all CWRA institutions as well as the performance of college freshmen tested in CLA institutions. The vertical distance from the diagonal (regression) line indicates performance above or below expected on the Performance Task given the Entering Academic Ability of students at that institution. Exercise caution when interpreting the results displayed in this figure if you believe tested seniors are not representative of the population of seniors at your school.

3.5 CWRA Performance vs. Entering Academic Ability (EAA)



This section provides information about the sample of CLA institutions that serves as the comparison group for the CWRA college readiness metric.

Carnegie Classification

Table 4.1 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 4.1 counts exclude some institutions that do not fall into these categories, such as Special Focus Institutions and institutions based outside of the United States.

4.1 Carnegie Classification of Institutional Sample

	Nation (n = 1,713)		CLA (n = 148)	
Carnegie Classification	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 4.2 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.

4.2 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.

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 freshmen (as verified by the registrar) was only 4 points higher than that of the entire freshman class*: 1050 versus 1046 (n = 153).

The correlation between the average EAA score of CLA freshmen and their classmates was extremely high (r = .90, n = 153).

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 153 school registrars in response to a fall 2009 request for information.

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.

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

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

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)

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
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

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

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

These internal analyses can help you generate hypotheses for additional research, which you can pursue through CWRA in-depth sampling in experimental areas (e.g., programs within your high school) 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/CWRA, guest-speakers from the larger world of assessment, and/or CLA/CWRA staff members who provide updates or insights to CLA/CWRA-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 formed as a clearing house 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 here we encourage institutions to move toward a continuous system of improvement in teaching and learning stimulated by the CWRA. Without your contributions, the CWRA would not be on the exciting path that it is today. We look forward to your continued involvement!

Introduction

The CWRA employs direct measures of skills in which students perform cognitively demanding Performance Tasks from which quality of response is scored.

CWRA measures are administered online and contain open-ended prompts that require constructed responses. There are no multiple choice questions.

CWRA tasks require that students integrate critical thinking, analytic reasoning, problem solving, and written communication skills. The holistic integration of these skills on the CWRA 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.

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?

Iterative Development Process

A team of researchers and writers generate ideas for Performance Task storylines, and then contribute to the development and revision of the prompts and Performance Task documents.

During the development of Performance Tasks, care is taken to ensure that sufficient information is provided to permit multiple reasonable solutions to the issues presented 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 are also drafted and revised during the development of the documents. Questions are designed so 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, draw conclusions and justify those conclusions.

After several rounds of revision, the most promising of the Performance Tasks 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 CWRA. Because each CWRA task and its scoring rubric differs, 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 CWRA 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 CWRA 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?

- Are 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 Performance Task 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 evaluate 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.

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 CWRA 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.

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.

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 prompt has a unique scoring rubric, and the maximum number of reader-assigned raw score points differs across prompts. Consequently, a given reader-assigned raw score, such as 25 points, may be a relatively high score on one prompt but a low score on another prompt.

To adjust for such differences, reader-assigned raw scores on the different prompts are converted to a common scale of measurement. This process results in scale scores that reflect comparable levels of proficiency across prompts. For example, a given CWRA scale score indicates about the same percentile rank regardless of the prompt on which it was earned. This feature of the CWRA scale scores allows combining scores from different prompts to compute a school's mean scale score.

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 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 prompt will also have the highest scale score on that prompt, 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 prompt receiving a scale score of approximately the same value as the maximum EAA score of any college freshman who took that prompt. Similarly, the lowest raw score earned on a prompt would be assigned a scale score value that is approximately the same as the lowest EAA score of any college freshman who took that prompt.

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 prompt will receive the same scale score regardless of when the student took the prompt.

F.1 CWRA Scores (unadjusted percentiles for college students at CLA institutions)

Percentile	Freshman Score	Senior Score
99	1350	1394
98	1273	1355
97	1226	1347
96	1222	1331
95	1219	1316
94	1215	1310
93	1205	1289
92	1203	1281
91	1197	1272
90	1191	1268
89	1183	1261
88	1175	1257
87	1174	1256
86	1170	1249
85	1164	1245
84	1161	1242
83	1155	1236
82	1147	1235
81	1144	1230
80	1141	1222
79	1137	1220
78	1132	1218
77	1131	1212
76	1130	1210
75	1129	1205
74	1126	1204
73	1122	1203
72	1121	1201
71	1120	1199
70	1113	1197
69	1112	1196
68	1111	1195
67	1110	1194
66	1102	1191
65	1101	1187
64	1096	1182
63	1095	1181
62	1094	1180
61	1093	1178
60	1090	1177
59	1087	1174
58	1084	1172
57	1083	1170
56	1078	1169
55	1077	1167
54	1075	1166
53	1072	1164
52	1069	1163
51	1068	1162
50	1067	1159
49	1064	1158
48	1063	1157
47	1061	1155
46	1060	1152
45	1059	1148
44	1054	1146
43	1053	1144
42	1052	1143
41	1051	1142
40	1050	1140
39	1050	1138
38	1049	1137
37	1048	1134
36	1045	1133
35	1036	1129
34	1035	1128
33	1032	1124
32	1028	1123
31	1026	1120
30	1025	1118
29	1023	1117
28	1021	1116
27	1019	1116
26	1014	1115
25	1010	1114
24	1009	1113
23	1007	1106
22	1003	1105
21	1000	1103
20	999	1093
19	997	1088
18	996	1083
17	993	1077
16	992	1074
15	989	1065
14	988	1063
13	987	1061
12	983	1059
11	975	1056
10	972	1053
9	962	1052
8	960	1015
7	956	1011
6	936	995
5	925	972
4	910	966
3	901	961
2	894	957
1	861	921

In tandem with this report, we provide a CWRA Student Data File, which includes variables across three categories: self-reported information from students in their CWRA online profile; CWRA 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 HSSSE, portfolios, grades, local assessments, course-taking patterns, participation in extracurricular programs, etc.) to help you hypothesize about school-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

CWRA Scores and Identifiers

- CWRA scores (depending on the completeness of responses):
  - Performance Task scores
  - Student Performance Level category (i.e., well below expected, below expected, near expected, above expected, well above expected) if CWRA score and entering academic ability (EAA) scores 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 scale score)
- SLE score
- Entering Academic Ability (EAA) score
- Unique CWRA 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 course tracks, programs, etc., if applicable)
- SAT I - Math
- SAT I - Verbal / Critical Reading
- SAT Total (Math + Verbal)
- SAT I - Writing
- ACT - Composite
- GPA

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