



COLORADO

Department of Education

Using ACCUPLACER as an Optional Measure on the AEC Performance Framework

Accountability and Data Analysis

September 11, 2014

Background Information

- In previous years, only a few schools submitted ACCUPLACER as an optional measure.
- This year, there was a dramatic increase in the number of schools submitting ACCUPLACER for a variety of different purposes.
- Due to this increase, we needed to do additional research on ACCUPLACER and reach out to the vendor (College Board) around appropriate uses of the assessment results.



ACCUPLACER Assessments

| Placement | Diagnostic |
|-----------------------|----------------------------------|
| Arithmetic | Diagnostic Arithmetic |
| Elementary Algebra | Diagnostic Elementary Algebra |
| College-Level Math | |
| Reading Comprehension | Diagnostic Reading Comprehension |
| Sentence Skills | Diagnostic Sentence Skills |



ACCUPLACER Placement Tests



ACCUPLACER Placement Tests: Purpose and Format

- The primary function of the ACCUPLACER assessments is to assist with determining if students are prepared for a college-level course or if they would benefit from a developmental course.
 - ACCUPLACER Program Manual - April 2014, p6
- ACCUPLACER uses computer-adaptive testing technology to select specific test questions that are best suited for each particular test taker. This “tailoring” of the test for each student allows for accurate diagnosis of students’ knowledge and skills while using fewer items than are typically required in traditional paper-and-pencil tests.
 - ACCUPLACER Program Manual - April 2014, p11



ACCUPLACER Placement Tests: Scoring and Interpretation

- Scores for the ACCUPLACER multiple-choice tests ranges from 20 to 120 points.
- ACCUPLACER tests are designed to assist institutions in placing students into appropriate courses. Given that institutions differ greatly with respect to composition of the student body, faculty, and course content, it is not possible to stipulate specific test cut scores to be used for placement decisions. Instead, each institution should establish their own cut scores to facilitate placement decisions based on factors and data unique to their institution.

-ACCUPLACER Program Manual - April 2014, p13



ACCUPLACER Placement Tests: Scoring and Interpretation

- The Colorado Community College System (CCCS) published guidelines for course placements associated with various ACCUPLACER Placement Test score ranges.
- Although the information is several years old and CCCS is looking to build their own assessment so haven't reviewed the cut-scores recently, their ACCUPLACER guidelines can still be useful for interpreting Colorado AEC student performance.



CCCS
Recommended
Courses based
on
ACCUPLACER
Placement
Scores

| Reading (i.e. Reading Comprehension) | | |
|---|-----------------------------|-------|
| Class Placement | | Score |
| Literacy Program | | <25 |
| REA 30 | Basic Reading Skills | 25-39 |
| REA 60 | Foundations of Reading | 40-61 |
| REA 90 | College Preparatory Reading | 62-79 |
| College Placement | | |
| Accuplacer | | 80+ |
| ACT | | 17+ |
| SAT | | 430+ |

| English (i.e. Sentence Skills) | | |
|---------------------------------------|----------------------|-------|
| Class Placement | | Score |
| Literacy Program | | <25 |
| ENG 30 | Basic Writing Skills | 25-49 |
| ENG 60 | Writing Fundamentals | 50-69 |
| ENG 90 | Basic Composition | 70-94 |
| College Placement | | |
| Accuplacer | | 95+ |
| ACT | | 18+ |
| SAT | | 440+ |



CCCS
Recommended
Courses based
on
ACCUPLACER
Placement
Scores

| Math (Arithmetic and Early Algebra) | | | |
|--|-----------------------------|------------|---------------|
| Class Placement | | Arithmetic | Early Algebra |
| Literacy Program | | <24 | |
| MAT 30 | Fundamentals of Mathematics | 24-56 | |
| MAT 60 | Pre-Algebra | 57-120 | <45 |
| MAT 90 | Introductory Algebra | | 45-60 |
| MAT 106/099 | Intermediate Algebra | | 61-84 |
| College Placement | | | |
| Accuplacer | | | 85+ |
| ACT | | | 23+ |
| SAT | | | 460+ |

- Note that even the highest score on the Arithmetic assessment, means the student needs to take several remedial courses before being ready for college-level work.



ACCUPLACER Placement Tests: AEC SPF Expectations

- We asked the vendor representative, and she indicated that a reasonable PWR expectation for an AEC student would be **1 semester of remediation from college-ready.**
- ACCUPLACER Placement Test cut-scores for an individual student to be considered a success for AEC Postsecondary and Workforce Readiness reporting are as follows:

| ACCUPLACER Placement Test | Remedial Course Placement | ACCUPLACER Cut-Score |
|---------------------------|-------------------------------------|----------------------|
| Reading Comprehension | REA 90: College Preparatory Reading | 62 |
| Sentence Skills | ENG 90: Basic Composition | 70 |
| Early Algebra | MAT 90: Introductory Algebra | 61 |



ACCUPLACER Placement Tests: AEC SPF 2014

- Aggregate the student results to the school level:

$$\frac{\text{Total students successfully meeting ACCUPLACER cut}}{\text{Total students taking ACCUPLACER Placement test}} = \% \text{ PWR ready}$$

- The % PWR ready will be used by CDE to provide a rating on the 2014 AEC SPF.
- CDE will use the default AEC rating cuts, as comparison data is not available:

| Rating | Norm | Cut-score |
|---------------|---|-----------|
| Exceeds | at or above 90% of students | 90 |
| Meets | below 90% but at or above 60% of students | 40 |
| Approaching | below 60% but at or above 40% of students | 60 |
| Does Not Meet | below 40% of students | |



ACCUPLACER Placement Tests: Appropriate Grade Levels

- Although ACCUPLACER tests were designed as placement tests, they can serve as a tool to evaluate the college readiness of students in high school in cases where higher education institutions or departments of education have established a college readiness definition and metric. In this model, ACCUPLACER tests are administered to high school students **late in the junior year, or early in the senior year**, as a way to provide them with information about the skills needed for success in college.

-ACCUPLACER Program Manual - April 2014, p6



ACCUPLACER Placement Tests: Validity Study

- Vendor study supports the placement validity of ACCUPLACER scores as a measure for deciding the appropriate college course enrollment for students. The results of this study support a moderate-to-strong relationship between test scores and subsequent course performance.
 - Mattern K.D. & Packman, S. (2009) Predictive validity of ACCUPLACER® scores for course placement: A meta- analysis. New York: The College Board, p.6.
- Validity has not been established for any other uses of ACCUPLACER Placement test results.
- CDE is committed to including assessment data in a manner validated by the test vendor.



ACCUPLACER Placement Tests: Approvable Uses

- **Appropriate** for course-placement
- **Appropriate** as a Postsecondary and Workforce Readiness measure on the AEC performance frameworks for students with enough credits to qualify as 11th or 12th graders
- **Not appropriate** for students with 9th or 10th grade credits
- **Not appropriate** as an Achievement, Growth or Student Engagement measure on the AEC performance frameworks



ACCUPLACER Placement Tests: AEC SPF 2014

- In 2013, CDE implemented a policy for the 2014 AEC SPF that required results for all performance indicator if the schools enrollment was over 20 students.
- We understand that CDE had different rules last year for ACCUPLACER inclusion on the AEC SPF.
- For this year, CDE will waive the indicator data requirement for those schools who selected ACCUPLACER Placement exams for the Achievement and/or Growth measures.
- For future years, we will expect schools to use the following valid methods for achievement and growth indicators, using the ACCUPLACER Diagnostic test.



ACCUPLACER Diagnostic Tests



ACCUPLACER Diagnostic Tests: Purpose and Format

- The ACCUPLACER Diagnostic tests will provide high schools and postsecondary institutions a detailed analysis of test-takers' proficiencies and skills in English and math. These tests along with the Placement tests can be administered as an intervention tool to enhance college readiness, retention, persistence, and college completion.
- Results from the diagnostic tests pinpoint students' strengths and weakness so that targeted instruction can be prescribed. Each test contains 40 items, eight items from each of five domains. Each test is computer-adaptive and untimed.

- ACCUPLACER Program Manual - April 2014, p47



ACCUPLACER Diagnostic Tests: Domains and Scoring

- The diagnostic tests provide both numerical and categorical scores for each of the five domains included in the diagnostic test. The numeric score scale for each domain ranges from 1 to 15 in whole number increments.
- To assist users in interpreting the numeric score a categorical score is also reported. The categorical scores range are **Needs Improvement, Limited Proficiency, and Proficient.**

- ACCUPLACER Program Manual - April 2014, p47



ACCUPLACER DIAGNOSTIC TESTS:

Point totals and
associated
Categorical Scores

| Diagnostic Test Diagnostic Domains | Number of Questions | Number of Points |
|---------------------------------------|------------------------|---------------------|
| Domain 1 | 8 | 15 |
| Domain 2 | 8 | 15 |
| Domain 3 | 8 | 15 |
| Domain 4 | 8 | 15 |
| Domain 5 | 8 | 15 |

| Categorical Score | Domain Point Range |
|---------------------|-----------------------|
| Needs Improvement | 1-4 |
| Limited Proficiency | 5-9 |
| Proficient | 10-15 |

For Domain and Categorical descriptions for each Diagnostic Test, see ACCUPLACER Program Manual - April 2014, p47-59 .



ACCUPLACER Diagnostic Tests: SPF Achievement Expectations

- We asked the vendor representative, and she indicated that a reasonable achievement target would be a **student scoring Proficient** (10+ points) on each domain of the Diagnostic test.
- Note: The ACCUPLACER Diagnostic tests do not differentiate among grade levels, so the expectation for all students is to score Proficient.
- Arithmetic results can be submitted for middle school grades (6-8) only.



ACCUPLACER Diagnostic Tests: AEC SPF Growth Expectations

- We asked the vendor representative, and she indicated that a reasonable growth target for a **1 semester course, would be to increase 1 Categorical Score per domain.**
- To account for how close/far a student is from the category cut, we are translating this into a requirement that a student must either improve by **1 category** or **3 points** from pre- to post-testing in each domain in order to achieve his growth target.
- If the student pre-tests at the proficient level, she is expected to **stay proficient** in that domain.



ACCUPLACER Diagnostic Tests: AEC SPF 2014

- Aggregate the student results to the school level:

$$\frac{\text{Total students meeting achievement/growth target}}{\text{Total students taking ACCUPLACER Diagnostic}} = \% \text{ meeting target}$$

- The % meeting target will be used by CDE to provide a rating on the 2014 AEC SPF.
- CDE will use the default AEC rating cuts, as comparison data is not available:

| Rating | Norm | Cut-score |
|---------------|---|-----------|
| Exceeds | at or above 90% of students | 90 |
| Meets | below 90% but at or above 60% of students | 40 |
| Approaching | below 60% but at or above 40% of students | 60 |
| Does Not Meet | below 40% of students | |



ACCUPLACER Diagnostic Tests: Approvable Uses

- **Appropriate** to guide student instruction
- **Appropriate** for all grade levels
- **Appropriate** as an Achievement and Growth measure on the AEC performance frameworks

- **Not appropriate** as a Student Engagement or Postsecondary and Workforce Readiness measure on the AEC performance frameworks



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Questions?

