



**Content, Consequential And Cut-Score Validity
Study Of ACCUPLACER Reading Test**

Submitted to

**Dr. Douglass Glasnapp, University of Kansas
Dr. John Poggio, University of Kansas**

**Victoria Rosario, Manager, Matriculation Unit, Chancellor's Office
Mindy Sloan, Specialist, Matriculation Unit, Chancellor's Office**

Dr. Loreen Easterly, Dean, Student Development, Cabrillo

Via

Jing Luan, Ph.D., Director, Institutional Research, Cabrillo

Submitted by

**Terrence Willett, Research Technician
Office of Institutional Research**

Monday, December 6, 1999

**John D. Hurd
Superintendent/President**

**Jing Luan, Ph.D.
Director, Institutional Research**

Content, Consequential, And Cut-Score Validity Study Of ACCUPLACER Reading Test

Office of Institutional Research
December 6, 1999

SUMMARY

Cabrillo College performed content review, consequential validity, and cut score validity tests for the ACCUPLACER reading comprehension exam for use as a placement instrument. ACCUPLACER passed content review, exceeded the 75% appropriate placement criterion for consequential validity, and had cut scores that were deemed conditionally appropriate.

INTRODUCTION

Cabrillo College tested the ACCUPLACER Reading Comprehension battery of tests for use in assessing incoming students' reading level. In response to the Advisory from the Chancellor's Office (see Appendix) and to obtain probationary approval to use ACCUPLACER from the Chancellor's Office, Cabrillo must provide data analysis on content review, consequential validity, and cut score validity. Our consequential and cut score validity are conditional due to the following three factors:

- 1) we opted not to use student self-evaluation of placement as we have generally found our students to be of low accuracy in their judgement of their skill level,
- 2) at time of reporting, grade data was not available, and
- 3) exhaustive items-to-skills matching for content review could not be conducted because of College Board's reluctance to provide the entire battery of ACCUPLACER test items.

METHODS

For content review, four reading faculty members who received assistance from the Assessment Office and the Office of Institutional Research participated in mock testing. Without prior conferencing among themselves, the faculty examined the test items shown on screen during their mock testing sessions to match test objectives to pre-requisite skills. For consequential validity, we examined faculty evaluations of students' skills during the third week of class. Cut-score validation provided extra data should the first two types of validity studies yield inconclusive findings. Student demographics are available at the end of the report (Tables 4 through 9).

Instructors were asked to evaluate their students' preparedness for their class on a five level scale:

- 1) very strong ability (could pass easily),
- 2) strong ability (should pass),
- 3) moderate ability (will pass if applies self),
- 4) weak ability (may not pass),
- 5) very weak ability (probably won't pass).

A total of 89 reading students who had taken the ACCUPLACER assessment test received a preparedness rating from their instructors participated in the validation study. Twenty two (22) of the students had enrolled in Reading 100, a college level non-transfer course, and 67 of the students had enrolled in Reading 52, a college level transfer course. Data were analyzed with SPSS 10.0.

RESULTS AND DISCUSSION

Content Review Validity

It appears that the faculty achieved consensus on the test objectives to pre-requisite skills match (Tables 1 and 2). They collectively found that ACCUPLACER reading test items, available to them in their mock tests, appropriately tested students' skills covered in the test objectives provided by the test publisher (Tables 1 and 2). Some of the test objectives offered by the test publisher are not necessarily required in the reading classes at Cabrillo and may have resulted in a lower number of agreements in some cases.

Table 1. Test Objectives to Pre-requisite Skills Match for READ 100/106 Eligibility

ACCUPLACER Test: Reading Comprehension →	Passage followed by a question based on the text				Sentence relationships			
	Kind of information processing required				Relationship between two sentences			
	Explicit statements related to main idea	Explicit statements related to secondary idea	Application	Inference	Second sentence supports first	Second sentence contradicts first	Second sentence offers same information as first	
Reading 255/205/206 Course Content ↓								TOTAL
Comprehension	4	4	4	4	4	4	4	28
Ability to find main idea	4	4	3	4	4	3	3	25
Critical reading, inference, drawing conclusions	4	4	3	4	3	3	2	23
Vocabulary	2	2	1	2	2	2	2	13
Study skills	3	1	3	1	1		1	10
Rate improvement	2		1	1				4
TOTAL	19	15	15	16	14	12	12	

Table 2. Test Objectives to Pre-requisite Skills Match for READ 52 Eligibility

ACCUPLACER Test: Reading Comprehension →	Passage followed by a question based on the text				Sentence relationships			
	Kind of information processing required				Relationship between two sentences			
	Explicit statements related to main idea	Explicit statements related to secondary idea	Application	Inference	Second sentence supports first	Second sentence contradicts first	Second sentence offers same information as first	
Reading 100/106 Course Content ↓								TOTAL
Vocabulary	3	3	2	3	2	2	2	17
Comprehension	4	4	3	4	4	4	4	27
Study Skills	3	2	3	1	1		1	11
Critical Reading	4	4	4	4	3	4	3	26
Reading Rate	3		3		1		1	8
TOTAL	17	13	15	12	11	10	11	

Consequential Validity

ACCUPLACER scores students on a scale from 0 to 120 (although there are a few cases where a student can score higher). The Cabrillo College Assessment Center advised students receiving an ACCUPLACER score of 67-81 to enroll in English 100 and those with a score above 81 to enroll in English 52. Students scoring lower than 67 were advised to attend a basic skill level reading course. All 65 of those who scored above 81 enrolled in English 52. Two students who scored below 81 enrolled in English 52 and the rest (22 students) enrolled in English 100.

Table 3 shows that 100% of instructor assessments indicated that the students had moderate to very strong ability to pass the class in which they were enrolled. In comparison with the recommended 75% level in the Standards for Test Validations published by the Chancellor's Office, instructors seem to feel that all their students were adequately prepared and thus appropriately placed.

Table 3. Instructor assessment of student ability to pass.

Ability	Reading 100		Reading 52	
	#	%	#	%
Very Strong	3	15	39	65
Strong	14	70	15	25
Moderate	3	15	6	10
Weak	0	0	0	0
Very Weak	0	0	0	0
Moderate and above	20	100	60	100
Total	20	100	60	100

Cut Score Validity

All of the students were assessed by their instructors to be adequately prepared for the class they are enrolled in including the 2 students who took a course higher than their ACCUPLACER cut score recommended. There is no evidence to show that current cut scores are inappropriate. However, there are also not sufficient data to conclude that current cut scores are correct and should not be modified at a later time as more evidence comes to light.

Student Demographics

Table 4. Age

Mean	21.4
sd	8.1
Median	18
Responses	56
Missing	33
Total	89

Table 5. Gender Identification

	#	%
Male	35	55.6
Female	28	44.4
Total	63	100
Unknown	26	29.2
Grand Total	89	100

Table 6. Ethnicity

	#	%
American Indian	1	1.7
Asian/Pacific Islander	1	1.7
Black	2	3.4
Filipino	0	0
Hispanic	8	13.8
White	44	75.9
Other	2	3.4
Total	58	100
Unknown	31	34.8
Grand Total	89	100

Table 7. Primary Language

	#	%
English	55	91.7
Other	5	8.3
Total	60	100
Unknown	29	32.6
Grand Total	89	100

Table 8. Verified Learning Disability

	#	%
Yes	3	5
No	57	95
Total	60	100
Unknown	29	32.6
Grand Total	89	100

Table 9. Admission Status

	#	%
New, first time at any college	49	81.7
New to this college but have attended other college	8	13.3
Returning to this college after absence from this college	1	1.7
Continuing at this college	2	3.3
Total	60	100
Unknown	29	32.6
Grand Total	89	100

Appendix

Summary and Analysis of Chancellor's Office Advisory

The major points from the Advisory Matriculation Assessment Advisory dated Thursday, 18 Nov 1999, herein called the Advisory, are summarized as follows strictly on matters related to Cabrillo, with the original advisory texts italicized:

Scenario 1 (most relevant).

The college/district was using a second-party test prior to July 1, 1999 for which it had been gathering and maintaining evidence as called for in the Standards, but as of July 1999 that test was removed from the Approval Status Summary. The college/district wishes to continue using that test. This refers to College Board ACCUPLACER (CPT and Companion) Reading Comprehension.

It has been decided that those colleges that were in the process of conducting local content validation and disproportionate impact studies on tests removed from the Second Party Assessment Instrument Approval Status Summary (August 30, 1999) are permitted to continue the use of those tests for placement purposes provided their local validation studies are supportive of continued use. This is true for Reading, Math, and English. Except for Reading, ACCUPLACER failed for English and for Math in Elementary Algebra. Thus, those colleges evaluating locally second-party instruments in anticipation of a July 1, 1999 transition to "renewal" approval ARE authorized to continue to administer the testing instrument(s) until October 1, 2000.

This memorandum serves as a reminder that colleges are prohibited from using any single assessment instrument, method, or procedure, by itself, for placement, required referral to appropriate services, or subsequent evaluation of any student [Title 5, §55521 (a)(3)]. Is this the regulation that is mandating the use of multiple measures?

We take this opportunity to remind districts and colleges that standardized test scores are not required as part of a placement decision. Assessment procedures can be based on solid multiple measures batteries, using test scores from standardized tests as comparison tools. In this way standardized tests allow us to conduct research, and at the same time allow us to continue sound assessment practices. We look forward to streamlining an efficient and effective assessment process.

Scenario 2

If we start using a new second party instrument today, we will no longer need to conduct reliability (it is not clear if they refer to test-retest or inter-rater) and freedom from bias studies. Both scenarios recognize that a second-party publisher has very likely already met requirements for test bias and reliability, and thereby a local college/district needs only to document evidence of the test's validity. This assures a minimum classification of Probationary Approval and allows the college to use the test for two years. (we are not clear on the deadline for submitting validity evidence if it is needed at all). This also means that we can still shop around for a better computerized testing tool, as suggested by certain Math faculty. There is a good chance that ACCUPLACER will receive system-wide approval, but we must answer the question: have we done good market research to land the best computerized placement tool? Given the concerns expressed by both the English and Math faculty, I don't think I can say that they will be entirely comfortable with ACCUPLACER. That might mean that they may not be behind us when any student challenges are brought up. Keep in mind that Cabrillo College has conducted one of the most involved content reviews in assessment testing, so we are pretty sure about our faculty's evaluations.

Conclusion: Cabrillo College has opted to re-activate MDTP, so we are only dealing with ACCUPLACER for Reading, which we were using before July 1 and have been collecting data since its use. Thus, the minimum evidence required to gain at least Probationary Approval status is satisfactory evidence addressing one of the validity standards, content-, criterion-, or consequential-related validity. Our content review is test subject area based. Therefore, supplemental evidence from another validity test is needed.

We must obtain the ACCUPLACER test scores from the Assessment Office immediately in order to meet the December 6 deadline. Research on consequential validity has been at a standstill due to lack of data and the deadline is fast approaching.

On December 6th, OIR must submit content validity, consequential validity evidence to the Chancellor's Office on the use of College Board ACCUPLACER (CPT and Companion) Reading Comprehension.

MATH faculty need to continue with content review for Elementary Algebra for ACCUPLACER and data collection should still be carried out for MATH.

I think it is also a good idea to clarify with the Chancellor's Office the areas that are in questions in my summary.

**CALIFORNIA COMMUNITY COLLEGES
CHANCELLOR'S OFFICE**
1102 Q STREET
SACRAMENTO, CA 95814-6511
(916) 445-8752
<http://www.cccco.edu>
STATE OF CALIFORNIA

**MATRICULATION
ASSESSMENT ADVISORY**



November 17, 1999

TO: Superintendents and Presidents
Matriculation Directors/Coordinators
Assessment Coordinators
Institutional Researchers

FROM: Edward O. Gould, Vice-Chancellor
Student Services and Special Programs

SUBJECT: Multiple Measures and Second Party Assessment Instrument Advisory

Synopsis: We were very pleased to have had the opportunity to listen to representatives from the matriculation community, including members of the Research and Planning Group and the California Community Colleges Assessment Association, to discuss concerns and ideas regarding matriculation assessment. This is an exciting and challenging time.

Given the events of this past review cycle with a number of second-party instruments not receiving approval for use in the community colleges, matriculation staff members are exploring the utilization of various multiple measure processes at the campuses as we strive to keep basic assessment principles intact. As you are all aware, one of these principles involves using measures that do not discriminate against students as a function of race, religion, ethnicity, linguistic background, age, gender, or physical/mental limitations [Title 5, §55521(6), 59300-59301]. For example, we cannot use a student's age as a factor in the evaluation of any student for the purposes of course placement. In that spirit, we continue to work to develop multiple measures which describe student *skills and performance*, and which give us opportunities to address strengths and areas of need. Diagnostic information is critical in developing and implementing effective instructional programs and interventions.

This memorandum serves as a reminder that colleges are prohibited from using any single assessment instrument, method, or procedure, by itself, for placement, required referral to appropriate services, or subsequent evaluation of any student [Title 5, §55521 (a)(3)].

OPTIONS AVAILABLE TO COLLEGES IN CONSIDERATION OF
RECENT SECOND-PARTY ASSESSMENT USAGE DECISIONS

Below are described two scenarios in which a college/district may find itself. For each we have provided information and recommendations which are in keeping with the *Standards, Policies and Procedures for the Evaluation of Assessment Instruments Used in the California Community Colleges (3rd Edition, 1998)*. Described are procedures to be followed to allow a college to use a test that no longer appears on the Second-Party Assessment Instrument Approval Status Summary (August 30, 1999).

NOTE: Because of the time it has taken to reach decisions and inform the field of those decisions, colleges/districts will have until DECEMBER 6 to transmit needed documentation (and not the previously announced deadline on November 22).

1. The college/district was using a second-party test **prior to July 1, 1999** for which it had been gathering and maintaining evidence as called for in the *Standards*, but as of July 1999 that test was removed from the Approval Status Summary. The college/district wishes to continue using that test. These tests include:

- ACT ASSET
- College Board Accuplacer (CPT and Companion) Reading Comprehension
- College Board Accuplacer (CPT and Companion) Sentence Skills
- College Board Accuplacer (CPT and Companion) Arithmetic
- College Board Accuplacer (CPT and Companion) Elementary Algebra
- College Board DTLs Sentence Skills Structure
- College Board DTLs Critical Reasoning
- College Board DTMS Arithmetic
- College Board DTMS Elementary Algebra
- College Board DTMS Intermediate Algebra

Consistent with the Chancellor's Office commitment to supporting local site assessment efforts and upon advice from our General Counsel, it has been decided that those colleges which were in the process of conducting local content validation and disproportionate impact studies on tests removed from the *Second Party Assessment Instrument Approval Status Summary* (August 30, 1999) are permitted to continue the use of those tests for placement purposes provided their local validation studies are supportive of continued use. **Thus, those colleges evaluating locally second-party instruments in anticipation of a July 1, 1999 transition to "renewal" approval ARE authorized to continue to administer the testing instrument(s) until October 1, 2000.** However, it is required that colleges immediately submit for review their content validity studies (or other validation evidence) which supports the college's use of the instrument. We strongly advise that as soon as possible you submit your work to us so we may continue to serve as a resource and offer feedback. Unless evidence is received (by December 6) and upon review determined to be appropriate for assisting with course placement at the institution, districts and colleges will not be authorized to administer these testing instruments.

2. A college or district was not using a second-party test prior to July 1, 1999, which was subsequently removed from the Approval Status Summary. The college/district has since determined it wishes to use the instrument.

This situation is the equivalent of a test never having been approved for use, but now a college desires to use the instrument. In this situation, the *Standards* detail requirements when a college/district wishes to use a second-party test under conditions of "Locally Managed Tests." However, the college's effort for the test to be approved for local use should be greatly reduced. Given the second-party test has undergone previous review and been approved, it is NOT necessary for the college to carry out freedom from bias or reliability studies. The publisher's evidence may be referenced to satisfy these latter two standards. Thus,

the minimum evidence required to gain at least Probationary Approval status is satisfactory evidence addressing one of the validity standards, content-, criterion-, or consequential-related validity.

Both scenarios recognize that a second-party publisher has very likely already met requirements for test bias and reliability, and thereby a local college/district needs only to document evidence of the test's validity. This assures a minimum classification of Probationary Approval and allows the college to use the test for two years. However, it is hoped and expected that second-party test publishers whose tests have been removed from the approved list will in time submit evidence to support the use of their tests in the system.

It is equally important for districts/colleges to be aware that when evidence is insufficient to establish cut scores, any course prerequisite established for the same course or course for which assessment is an equivalent point of entry cannot be enforced. Please see the Model District Policy (II.A.1.d) for a discussion of this point.

Absent evidence to support the use of testing instruments at your district/college, the improper use of assessment instruments may well render the college, district and the state Chancellor's Office vulnerable to student complaints and possible legal actions centered on access and the college's compliance with regulatory and legislated requirements in matriculation. Title 5 (§55521, 55524) describes conditions under which testing is to be conducted. It should be remembered that the conditions that prompted the MALDEF litigation were directly tied to inappropriate assessment and testing practices.

We take this opportunity to remind districts and colleges that standardized test scores are not required as part of a placement decision. Assessment procedures can be based on solid multiple measures batteries, using test scores from standardized tests as comparison tools. In this way standardized tests allow us to conduct research, and at the same time allow us to continue sound assessment practices. We look forward to streamlining an efficient and effective assessment process.

The Matriculation Advisory Committee (MAC) continues its work and dedication to the ongoing review of matriculation processes for the system and as such has convened an ad hoc committee designed to review the standards applied to testing instruments used in the California Community Colleges. The charge of the group will be to investigate the current applicability of *Standards, Policies and Procedures for the Evaluation of Assessment Instruments Used in the California Community Colleges (3rd Edition, 1998)* and analyze the implications of policy change for the *Standards*, Title 5 and MALDEF; and make recommendations to the MAC that will be considered before being moved to consultation by the Chancellor's Office.

As data are collected, as answers are found, and as effective methods of assessment and instruction are developed, we will work to showcase accomplishments. Collaboration within our system will lead to a more efficient and effective use of resources. Together, we are a powerful influence on education in California.

We look forward to working with all of you in the coming year.

Action/Date Requested: Please broadly disseminate this advisory to all appropriate individuals at your campus for guidance when considering what, if any, changes may be appropriate in the implementation of matriculation assessment at your district.

Contact: Victoria C. Rosario, Coordinator, Matriculation (916) 323-0799; Mindy Sloan, Specialist, Matriculation (916) 445-5809.

cc via email distribution lists:

- Chief Student Services Officers
- Chief Instructional Officers
- Academic Senate Presidents
- Student Senate Presidents
- Admissions Officers and Registrars
- R. Black
- K. Hallberg
- V. Rosario
- M. Sloan

I:matric/assess/KSadv