

1 **Multiple Measures in Assessment:**

2 **The Requirements and Challenges of Multiple Measures in the California**
3 **Community Colleges**

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6 Multiple Measures in Assessment Task Force 2013 – 14

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8 Michelle Grimes-Hillman, Mt. San Antonio College, Chair

9 Carolyn Holcroft, Foothill College

10 Janet Fulks, Bakersfield College

11 Dennis Lee, American River College

12 Phil Smith, American River College

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18 **Introduction**

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20 Assessing a student’s ability to be successful in courses and programs is an important and
21 necessary aspect of student success. Two major practices exist to predict a student’s
22 likelihood of succeeding in a course or program: 1) Successful completion of prerequisite
23 or advisory courses (as documented on transcripts) and 2) the assessment for placement
24 process. These two methods are presumed to be mechanisms that ensure that a student
25 has acquired the knowledge and skills necessary for success.

26
27 Presuming a student is prepared for a course through the completion of a prerequisite
28 course is a rather straightforward process; however, placing a student using an
29 assessment for placement process is necessarily more complicated, as such placements
30 can not be made based on assessment test scores alone. Some students may possess
31 necessary course or program skills but have difficulty demonstrating those skills on
32 standardized tests or fail to prepare adequately for an assessment test. For this reason,
33 Title 5 § 55502(i) clearly mandates that California community colleges use multiple
34 measures in their assessment processes: “‘Multiple measures’ are a **required** component
35 of a district’s assessment system and refer to the use of more than one assessment
36 measure in order to assess the student” [emphasis added]. The requirement to use
37 multiple measures is reiterated in Title 5 § 55522(a): “When using an English,
38 mathematics, or ESL assessment test for placement, it must be used with one or more
39 other measures to comprise multiple measures.”

40
41 While multiple measures have always been required by Title 5, adequate research into the
42 accuracy of these measures has not been readily available to inform educational
43 decisions. Individual colleges have made various decisions regarding the use of
44 subjective measures and have therefore reported differing experiences. While colleges are
45 required to employ assessment tools that have been validated, no mandate exists for a

46 corresponding effort to validate the application of multiple measures. This paper
47 addresses the broader issue beyond simply evaluating a transcript for previous
48 coursework or limiting placement based on an exam; it examines the use of multiple
49 measures in addition to placement tests as a way to improve the overall assessment of
50 students' abilities.

51
52 Title 5 § 53200 gives academic senates the responsibility for making recommendations
53 about academic and professional matters concerning "standards or policies regarding
54 student preparation and success." The intent behind prerequisites and placement
55 processes, including the selection and application of multiple measures, is to ensure or
56 enhance student success through proper preparation. Therefore, academic senates must be
57 directly involved and play a leading role in facilitating and developing recommendations
58 about assessment processes and the use of multiple measures at both local and state
59 levels.

60
61 The concept of applying multiple measures for placement is often misunderstood by local
62 colleges, and data is sometimes difficult to collect. Even within a single college
63 placement practices may vary among different disciplines. Multiple methods and
64 placement practices were summarized in 2011 (West Ed and the CCCCO). A survey was
65 implemented to examine current practices and applications of multiple measures. Of the
66 112 colleges in the California community college system, 59, or just over half provided
67 survey information about multiple measures. (See Appendix B). The survey noted that
68 only 48 of the 59 responding colleges reported how they used multiple measures, and 34
69 of the colleges reported using a "weighted score" of placement tests and then adding or
70 subtracting points for multiple measures. Twelve colleges reported relying most heavily
71 on qualitative data to direct placement decisions, placing less consideration on placement
72 test scores. WestEd (2011) reported that weighting of multiple measures varied widely
73 and that only a few colleges used regression analysis to predict success.

74
75 In this paper, "use of multiple measures for placement," or simply "multiple measures,"
76 refers to a process in which colleges rely on more than a single factor to determine
77 student readiness for a course or program. The purpose of this paper is to do the
78 following:

- 79 • review the value of and reasons for using multiple measures in California
80 community colleges for placing students into the curriculum;
- 81 • address the role of the academic senate, discipline faculty, and counselors
82 in multiple measures placement;
- 83 • provide guidance regarding best practices for implementing multiple
84 measures in order to improve placement accuracy.

85
86 In addition, the paper will explore the implications of multiple measures on current issues
87 involving efforts to implement a common assessment across the state, including
88 unresolved issues of portability of assessment for placement results, accuracy and
89 reliability of assessment, and local autonomy regarding assessment and placement
90 decisions.

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Regulatory Framework

Regulatory Guidelines for Multiple Measures

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Title 5 §55502(i) and 55522(a) explicitly require the use of multiple measures in assessment for placement. Thus, the question for California community colleges and districts is not whether to use multiple measures, but which measures to use and how to apply them.

100 Colleges have latitude in what types of multiple measures may be used in their placement
101 process. In addition to assessment tests, Title 5 §55502(i) notes that additional measures
102 may include “interviews, holistic scoring processes, attitude surveys, vocational or career
103 aptitude and interest inventories, high school or college transcripts, specialized
104 certificates or licenses, education and employment histories, and military training and
105 experience.” Furthermore, Title 5 § 55522(a) (2) allows the Chancellor’s Office to
106 “identify other measures of a student’s college readiness that community college districts
107 may use for student placement into the college’s curriculum.” This section of Title 5 has
108 permitted some colleges to explore the use of high school transcripts for placement, as
109 well as the scores earned through the CSU’s Early Assessment Program.

110 As noted in these Title 5 sections, the initial assessment process must consist of multiple
111 measures, meaning that all the various measures must be collected and evaluated prior to
112 determining the student’s placement. Colleges that rely only on assessment tests for
113 initial placement but then allow other measures to be considered on appeal of the decision
114 are not employing a multiple measures approach to placement. Instead they have a single
115 measure placement approach with a multiple measures appeals process, which is not in
116 alignment with the law.

117 Although assessment processes are most commonly employed to place students in
118 appropriate English, mathematics, or English as a Second Language (ESL) courses, a
119 college may have assessment processes for other sequential courses in the curriculum
120 (e.g., Chemistry). Since Title 5 §55502(i) indicates that multiple measures are a required
121 component of a college’s or district’s assessment system, colleges must also implement
122 multiple measures of assessment for any subject in which they have a placement process,
123 and these measures should be determined using data that provide knowledge about each
124 measure’s usefulness and accuracy.

Regulatory Discussion on Assessment Tests

126 Of the set of possible multiple measures, Title 5 places the most stringent guidelines on
127 assessment tests for placement. Using guidelines prepared by the Chancellor’s Office,

128 districts and colleges must validate all assessment for placement tests to ensure that the
129 tests are being used in a proper manner and that the tests show little or no cultural or
130 linguistic bias (Title 5 §55522(a)(1)). In general, with minor exceptions, the following
131 mandates and restrictions apply to all such tests:

- 132 • Assessment test procedures must be clearly communicated to students, including
133 the availability of sample tests, how assessment test results will inform placement
134 decisions, and any limits that the college or district places on retakes of the
135 assessment test. [§ 55522(b)]
136
- 137 • Assessment tests must be approved by the Chancellor’s Office. [§ 55522(c)(1)]
138
- 139 • Assessment tests may not be used in a manner or for a purpose other than that for
140 which it was developed or otherwise validated. [§ 55522(c)(2)]
141
- 142 • Assessment tests may not be used to deny admission to a college. [§ 55522(c)(3)]
143
- 144 • Assessment tests may not be used to exclude students from any particular course
145 or educational program, except that districts may establish appropriate
146 prerequisites. [§ 55522(c)(4)]
147

148 Although Title 5 contains no other specific guidelines about reviewing and evaluating
149 other assessment measures, Title 5§ 55522(c) (5) includes a blanket prohibition that no
150 “Student Success and Support Program practice which has the effect of subjecting any
151 person to unlawful discrimination” is permitted. Any assessment test that contains
152 culturally or otherwise biased content or language is therefore in violation of state
153 regulation. The Chancellor’s Office Assessment Workgroup, which reviews and
154 approves all locally developed or proposed assessment instruments, focuses on ensuring
155 that the instruments do not reflect any discrimination or bias. However, colleges and
156 districts should scrutinize their assessment for placement processes locally to guarantee
157 the absence of prejudicial language and content, not only to comply with Title 5 but
158 simply as good practice for the sake of students. Furthermore, the application of multiple
159 measures should be reviewed for any potential bias. Bias is not intuitive and is only
160 evident when placement results are examined using data that are disaggregated, and even
161 that examination may not be sufficient to identify bias. If, for example, a high school
162 experience that is only available to certain populations of students weighted heavily in
163 the placement process, this practice should be reviewed for potential adverse impacts.

164

165 **The Case for Multiple Measures**

166 Limiting assessment to a placement test, an exam with content and skills questions from
167 several courses in a curricular sequence, represents a single and potentially unsuitable
168 measure of student preparation for college coursework. Likewise, assessment of
169 foundational skills such as writing, reading, and computation, may be problematic if
170 limited to measures such as transcript evaluation, employment history, interviews, and
171 attitude surveys because, among other factors, students may have returned to college after
172 a long break or because such measures involve a level of self-reporting that,
173 unintentionally or not, may not accurately reflect students' preparation.
174

175 The drawbacks of relying exclusively on a single, high-stakes exam or test for placement
176 decisions are well known. Many have noted that since the placement tests themselves are
177 fairly brief, they are not able to delve deeply enough into the assessed subjects to provide
178 a more complete assessment picture. Another problem with placement tests is that even
179 the best students may do poorly taking an exam on content they may not have engaged
180 with for months or even years. Poor scores for these students lead to the problem of
181 underplacement, the placement of students in courses considerably below their true
182 knowledge and skill level. On the other end of the spectrum, since many placement
183 exams rely on multiple choice items, students who are strategic about guessing and
184 eliminating wrong answers may achieve high scores without having a solid grasp of a
185 subject's underlying principles. High scores for such students may lead to overplacement,
186 the placement of students in courses beyond their skill set and, consequently, in which
187 students are unlikely to succeed.
188

189 Research suggests that one reason to use multiple measures is to increase the predictive
190 ability of the placement process. In other words, applying multiple measures can
191 increase the accuracy of the placement process over a single placement test. Findings
192 from a recent predictive model study regarding the use of multiple measures that
193 examined placements and success rates for 42,000 first-time entrants to a large urban
194 community college system suggest that the use of multiple measures when determining
195 student placements lower the number of students that need remediation (up to 12 %) by
196 placing them in the correct courses; and at the same time increase the success of these
197 students in the courses that they were placed (Scott-Clayton, 2012, p. 38). Scott-
198 Clayton (2012) also notes that the benefits of using multiple measures rather than relying
199 on assessment tests alone are particularly strong for English placements because the use
200 of assessment tests alone seems to be more accurate for math placements than for English
201 (p. 37). The study also reported that an estimated 25-33 percent of students are
202 incorrectly over or under assessed (p. 37) when additional measures are not included in
203 the placement process. Other studies have reported similar problems with assessments.

204 Clayton, Crosta, and Belfield (2012) note that “roughly one in four test-takers in math
205 and one in three test-takers in English are severely mis-assigned, with severe under-
206 placements in remediation much more common than severe over-placements in college-
207 level coursework” (p. 4).

208 If misplacement claims made by Clayton, Crosta, and Belfield (2012) and others are
209 accurate, the consequences for community colleges that fail to include high quality,
210 validated multiple measures in the placement process are significant. In places like
211 California, which has 112 community colleges across the state, an incredibly large
212 number of placement tests are given in a single year, so research suggests that the number
213 of misplacements is likely to be quite high. The following placement test data from Fall
214 2010 offers a sense of the potential magnitude of the problem:

Subject	# of Placement Tests Given
Math	350,129
English-Writing	319,892
English-Reading	282,936
ESL-writing	20,925
ESL-reading	21,560
ESL-intergrated	31,297

215

216 While this chart does not indicate how much misplacement occurred in each category,
217 research suggests the number of misplacements may have been sizable. The large
218 number of total placements in California suggests that error rates of 25-33% impact a
219 considerably large number of students. For this reason, we must be more critical of the
220 accuracy of our colleges' assessment data and more curious about how our community
221 colleges use high quality, validated multiple measures in their assessment processes.

222 Inaccurate assessments resulting from the use of placement tests without multiple
223 measures may contribute to poor persistence and success rates of basic skills students.
224 We know that students enrolled in basic skills courses often do not move through English
225 and Math basic skills sequences and complete transfer level courses in high numbers. In
226 English, for example, of those who assessed at below transfer level, "the largest
227 proportion assessed at two levels below transfer level, and about 38% of this proportion
228 succeeded in completing transfer level English," and in mathematics, "of those who
229 assessed at below transfer level in mathematics, the largest proportion assessed at three

230 levels below transfer level, and 14% of this proportion succeeded in completing transfer-
231 level mathematics" (Basic Skills Report, Nov 2012). If 25-33% of students who assess
232 are misplaced, then the misplacements may be impacting students' ability to pass courses,
233 learn skills, and persist in high numbers.

234 Since the use of placement tests in isolation may result in students being inaccurately
235 placed into remediation when they were prepared for college-level work, more accurate
236 placements may also result in various direct benefits for these more prepared students.
237 Clayton, Crosta, & Belfield (2012) note that "prepared students who are assigned to
238 remediation may garner little or no educational benefit, but incur additional tuition and
239 time costs and may be discouraged from or delayed in their degree plans. Indeed, several
240 studies using regression-discontinuity (RD) analysis to compare students just above and
241 just below remedial test score cutoffs have generally found null to negative impacts of
242 remediation for these 'marginal' students" (p. 2). While the utility of remediation is a
243 complex subject that may produce various perspectives and conclusions, certainly no
244 student who truly has no need of remediation should be required to complete unnecessary
245 instruction, and the use of multiple measures may help to reduce the number of students
246 placed into this situation.

247 Another reason that correct placement is essential is that remediation is expensive, both
248 in terms of fiscal costs and the time it takes students to complete their degrees. The fiscal
249 cost of remediation has been estimated to be nearly \$7 billion dollars per year in the
250 United States (Clayton, Crosta, & Belfield, 2012, p.1). Many other costs related to the
251 impact of remediation on students are not included in this estimate.

252 A final important reason to use multiple measures in the placement process is that
253 colleges may use the improved assessment data to create better planning processes. By
254 improving the accuracy of placement process, colleges can collect better data and use that
255 data to impact other important processes from scheduling to educational planning.
256 Colleges often struggle to determine how many sections of a particular course should be
257 offered at each level of a curricular sequence, for example. More accurate assessment
258 data may be one of the keys to improving these planning processes, and the inclusion of
259 multiple measures in our assessment processes is an important step toward the goal of
260 improving the accuracy of assessments.

261

262 *Pros and Cons of Individual Assessment Measures*

263 The following table looks at a collection of pros and cons of some commonly used
 264 multiple measures. A complete chart is found in Appendix A.

Measure	Pros	Cons	Additional notes
Assessment using a standardized test			
<ul style="list-style-type: none"> • Placement tests • Standardized California Standards test • Early Assessment Program Test (EAP) 	Standardized and comparable among students that have taken the test.	A single high stakes test may not reflect all the student’s skills and abilities and may introduce testing bias.	Requires cut score validation. Accuracy may vary with test used. Alignment with curriculum may affect content validity.
Prior academic achievement			
<ul style="list-style-type: none"> • GPA (self-reported) • Transcripts • AP – Advance Placement course completion or test scores • Highest level course success 	Provides an aggregate measure of student achievement and motivation.	Concerns exists regarding accuracy or validity of grades and course work, especially when self-reported.	May be affected by the recency with which the skills or knowledge were acquired. Not comparable across a large population of students from different schools.
Demographics and socioeconomic status			
<ul style="list-style-type: none"> • Age • Full-time/ part-time status • No. of hours employed • First Generation status (highest level of parental education) • Socioeconomic status (PELL grant or BOG recipient) 	Evidence suggests that full-time status results in better success than part-time status.	Specific evidence in this area may not take into consideration other factors regarding full-time vs. part-time such as the economic or family conditions that allow full-time enrollment.	Data are inconsistent here, at times showing better success in younger age groups and other times in older students. Direct correlations are currently not objectively measurable. Student profiling may occur. Inequitable treatment of students inevitable.
Affective measures			
<ul style="list-style-type: none"> • Motivation (self-reported) • Declaration of a major 	Assessment of motivation level.	Self-reported information is very subjective.	Accuracy issues arise in the selection, recording, and changing of a major.
Other measureable factors that contribute to academic success			
<ul style="list-style-type: none"> • Student education 	Data has correlated	These variables are	The value of this data may

Measure	Pros	Cons	Additional notes
plans developed in 8 th grade or HS that continue through college – (called “programs of study” in some districts) representing evidence of motivation <ul style="list-style-type: none"> • Employment history 	these activities with success.	broad and depend upon rigor, content, and alignment with student goals.	vary with the college.

265

266 **Relationship between Multiple Measures, Prerequisites, and Assessment for**
 267 **Placement**

268 One way in which multiple measures may be used is to verify attainment of skills and
 269 knowledge expected in a prerequisite. As a condition of enrollment, a prerequisite is
 270 intended to specifically identify the skills or body of knowledge a student must have in
 271 order to be successful in the target course, and “the determination of whether a student meets
 272 a prerequisite shall be based on successful completion of an appropriate course or on an
 273 assessment using multiple measures” (§55003). Further, the ASCCC asserts that “students are
 274 placed into courses based on their success in prerequisite courses or an assessment process that
 275 involves the use of standardized tests in conjunction with other measures likely to effect the
 276 student’s performance (Student Success: The Case for Establishing Prerequisites Through
 277 Content Review, 2010). In other words, all placement decisions require the use of multiple
 278 measures.

279

280 Although prerequisites have long been a useful tool with which faculty can increase the
 281 likelihood of student success in their courses, recent events have brought a renewed sense
 282 of importance and interest in their use. Notably, the final recommendations from the
 283 Student Success Task Force in 2011 include Recommendation 3.3, incentivizing students
 284 to “begin addressing basic skills deficiencies in the first year.” Data from Achieving the
 285 Dream Initiative (November, 2013,) support the fact that students who take their remedial
 286 courses in the first term are more successful in all subsequent courses.

287 Multiple Measures should contribute to the success of placement, especially in
 288 prerequisite courses. However, placing prerequisites on courses does not guarantee the
 289 successful of completion of target course unless the curriculum is aligned.

290 **Making Placement Decisions with Multiple Measures**

291 All measures used for placement should be scrutinized and adopted based on available
 292 data rather than ease and portability alone. One way to address this issue is to have each
 293 college create a process to validate all measures, not just standardized assessments.

294 However, some colleges may not be readily able to provide logistical regression or
295 statistical models for their own student populations. For this reason, to some extent a
296 statewide examination of these individual measures and their reliability should be
297 conducted and made accessible to individual colleges. However, recognition of the
298 unique curriculum alignment factors and local populations places a heavy responsibility
299 on the local colleges to review and use the data appropriately.

300 Locally, colleges, in consultation with their academic senates, should have written
301 processes for validation and placement that involve discipline-specific faculty and student
302 affairs areas. Discussions should, at a minimum, include content of courses, level of
303 rigor, and college-level skill requirements such as writing, research, expectations, and
304 hours of work outside of class. The process should include built-in mechanisms to collect
305 data relevant to placement and success. This work usually requires the involvement of a
306 researcher who is part of the discussions from the early stages of development.

307 **Multiple Measures in Conjunction with a Common Assessment Test**

308 In recent years, many individuals and interested groups have called for placement results
309 that are portable among the colleges. The Board of Governors of the California
310 Community Colleges has asserted the value of portable placement results, and
311 Recommendation 2.1 of the 2011 Student Success Task Force stated that “Community
312 colleges will develop and implement a common centralized assessment for English
313 reading and writing, mathematics, and ESL.” A common assessment and individualized
314 cut scores can to some extent facilitate the goal of establishing portable placement results,
315 but the integration of such a common instrument with multiple measures is a challenge.
316 One goal of this paper and the ongoing research is to explore a multiple measures
317 approach that is both portable and accurate.

318 A system of portable placement decisions could benefit the students and the state in
319 various ways. Currently, each California community college selects and implements its
320 own placement system. While certain popular instruments may be common to multiple
321 districts, great variety still exists. Moreover, even if districts share a particular
322 assessment instrument, they may not accept each other’s placement decisions: each
323 district may interpret and apply test results differently and may use different multiple
324 measures to make placement decisions. Students, therefore, are often forced to re-test
325 and are assigned a new placement result when they move among colleges. A system of
326 portable placement would benefit students and create greater consistency by eliminating
327 the need for retesting and re-placement at each college. Such a system would be
328 especially useful to the many students who take courses at more than one college and
329 might enable easier student movement among community colleges. In addition,
330 community colleges and the state would experience cost savings if the number of

331 assessment tests taken could be reduced by making placement portable and minimizing or
332 eliminating the need for retesting.

333 California already has some tools in place which may help to facilitate the creation of a
334 system of portable placement results. Work on developing a common assessment
335 instrument is already underway. Curricular comparability through use of the CB 21
336 rubrics and the Course Identification Numbering System (C-ID) system may also allow
337 for or encourage a more universal placement system. However, the application of
338 multiple measures must also be a part of any discussion that hopes to achieve portable
339 placement results.

340

341 Agreement on the use of multiple measures in portable placement results for the
342 California community college system could take various forms. One possibility is that
343 colleges would reach concurrence on a consistent system of multiple measures that all
344 institutions would accept. Such discussions might best begin regionally, as colleges in a
345 given area might compare the measures they are using and find that they are applying
346 different processes that achieve the same or similar results. In the absence of statewide
347 consensus and portability, the creation of regional agreements could provide significant
348 benefit to students, as many students who move among various colleges would be most
349 likely to do so within a given geographic area, and institutions would still experience
350 specific cost savings through a reduction of re-testing. Such regional agreements might
351 also, over time, lead to broader discussions that create state-level portability.

352

353 Alternatively, colleges might develop their own applications of the common placement
354 instrument and of multiple measures and then agree to accept and trust the results of other
355 institutions. In such an instance, the use of multiple measures may help community
356 colleges to tailor the common assessment instrument to meet local needs. Local
357 community colleges could control the use of validated local multiple measures that they
358 determine are relevant for student placement in their communities. If colleges agree to
359 honor the placement results that student bring from other institutions, then a system of
360 portable placement would result without requiring specific agreement on the application
361 of the assessment instrument or of multiple measures.

362

363 However, the concept of portable placement does raise issues for many within the
364 California community college system. Certainly colleges within the system strive toward
365 comparability in curriculum and standards through such projects as the CB 21 rubrics, the
366 C-ID system, and the Transfer Model Curricula for the Associate Degrees for Transfer.
367 Nevertheless, with 112 institutions and nearly 2 ½ million students spread out across
368 more than 150,000 square miles, each district and even colleges within a district have
369 their own unique populations to serve and issues to address. Portable placement is
370 challenging when one considers the diversity of course offerings for unique student

371 populations and innovations for student course completion. Based on such factors as
372 compressed calendars, accelerated coursework, and different instructional modalities,
373 individual multiple measures may take on different meaning even within a given
374 discipline.

375 Given the wide variety of communities and cultures found throughout the state, the
376 concept of local control over decision-making is a fundamental value to many within the
377 community college system. Any discussion of common assessment or portable
378 placement must be weighed against the importance of local control and should strive to
379 respect this concept to the greatest extent reasonable while still serving the needs of both
380 students and the state as a whole.

381 **Collaboration in the local determination of Multiple Measures and placement**
382 **processes.**

383 Whereas the regulatory framework of Title 5 provides colleges and districts with
384 information regarding what is required and prohibited with respect to multiple measures
385 assessment, it does not give guidance to colleges and districts on what measures to use or
386 how to interpret individual or aggregated measurements. The professional judgment of
387 discipline faculty and counseling faculty is necessary to fashion a multiple measures
388 assessment process that maximizes students' likelihood of success in the courses in which
389 they are placed.

390 While research on community college placement processes supports the use of multiple
391 measures, integrating multiple measures into placement processes is not without costs
392 and challenges. Multiple measures need to be carefully examined and matched to the
393 needs of particular college communities so that local colleges can extend resources and
394 time to validate their measures. Discipline and counseling faculty, as well as the local
395 academic senate, need to ensure that the multiple measures selected by their college
396 contribute meaningfully to the placement process. All parties involved with placement of
397 students need to evaluate the ways in which the use of multiple measures fits into existing
398 placement processes and to incorporate a periodic review on the efficacy of the multiple
399 measures.

400 Academic senates, which have responsibility for making recommendations about
401 academic and professional matters regarding "standards or policies regarding student
402 preparation and success," play an important role facilitating and developing
403 recommendations about multiple measures assessment. The purpose of this section is to
404 provide context and structure for academic senate leaders, discipline faculty, and
405 counselors as they develop local multiple measures policies and procedures.

406

407 As discipline experts, the faculty in the areas being assessed have several roles to play in
408 the assessment for placement process. In developing the college's placement system,
409 discipline faculty can determine the skill sets that are needed for success in target courses
410 and with research partners can determine the best use of multiple measures along with
411 cut-off scores for assessment tests. Part of the role of discipline faculty is to discuss the
412 result of the validation data and cut-off scores and to ensure that placement decisions
413 result in student success by participating in the evaluation of placement processes. If the
414 college is basing initial placement decisions on information other than an assessment test,
415 such as using students' high school grades, discipline faculty should take responsibility
416 for determining how that information is applied for placement. Faculty will need to
417 consider how to best use available, validated data. Content validity is an important aspect
418 of any test such that discipline faculty need to review and interpret data. Student
419 behaviors and sophistication are important factors in success, and therefore student affairs
420 professionals should help interpret data. The data alone, produced by a researcher, do not
421 provide the interpretation and application. For this reason, collaboration and review are
422 essential. discipline faculty must be actively involved in discussions to help validate the
423 alignment of the methods and the results of the assessment process to the requirements of
424 the coursework (WestEd, 2012) and must not allow the local researcher to make
425 decisions or reach conclusions alone. In addition, the reliability of all measures should be
426 routinely evaluated based on factual outcomes of the placement decisions, including data
427 indicating what students were placed in what courses by what measures and with what
428 rates of success. Consistent and ongoing evaluation of the process and its results is
429 crucial to ensuring the validity and accuracy of the placement system.

430 In some cases, the primary roles of discipline faculty may involve establishing and
431 evaluating the assessment system, while initial individual placement decisions are
432 established by the college's assessment staff based on test results. In other cases, such as
433 placing students based on English faculty reading placement writing samples, discipline
434 faculty may themselves determine the initial placement of a student. Regardless of the
435 process and whether their role includes establishment and evaluation of the system or
436 direct involvement in placement decisions, discipline faculty should take direct
437 responsibility for the initial placements assigned to students.
438

439 Approval of a multiple measures process can include: the weighting for each of the
440 measures based on local research; decision matrices clearly demonstrating the roles of
441 decision makers; discipline faculty determining prerequisites; discussions with research,
442 admissions, counseling and discipline faculty setting cut scores for assessment tests; and
443 other measures based upon discussions with counseling, discipline faculty and research.

444 Counselors must be involved in the placement process before final placements are
445 determined, not just during the appeals process. As identified in the Standards of Practice
446 for California Community Colleges Counseling Faculty and Programs (2008), "academic
447 counseling services include assessment using multiple measures and diagnosis of
448 students' academic abilities, disabilities, strengths and weaknesses." As a result,
449 counseling faculty are trained to apply those measures and then make placement

450 recommendations based on a combination of assessment results and the institution’s use
451 of multiple measures. Counselors need to know how to work with students in exploring
452 information about their past educational experience, college readiness, possible
453 disabilities, and academic skills. These questions become crucial when a student places
454 below transfer-level English and math.”

455
456 Once initial placement based on discipline faculty expertise and multiple measures
457 adjustments by trained counselors have been determined, collaboration between
458 discipline faculty and counselors is crucial. A college must work to effectively ensure
459 that the application of multiple measures by counseling faculty is resulting in placement
460 decisions that are comparable to those that would be made by discipline faculty and that
461 the use of multiple measures does not result in placements inconsistent with the decisions
462 and standards of discipline experts. While clear guidance can be developed for how to
463 factor in external exam scores into placement decisions, counseling and discipline faculty
464 must collaborate to establish a common understanding as to how other measures factor
465 into such determinations and what steps are taken to verify that the placement process is
466 effective. No single system of collaboration will work for all colleges, but each
467 institution must work to create a system in which multiple measures are meaningfully
468 applied, counseling expertise is respected, and the judgment of the discipline faculty is
469 utilized.

470
471 In compiling the necessary data for both establishing and evaluating an accurate
472 assessment for placement system, college researchers also have a significant role to play.
473 The knowledge and training of researchers can help to ensure that information used in the
474 assessment system is valid, complete, and clear. However, the data alone, produced by a
475 researcher, do not provide the interpretation and application that faculty can provide.
476 Student services professionals and discipline experts must interpret the data, often with
477 guidance from the college researcher, and take responsibility for final decisions regarding
478 the system. The college researcher is an important member of the collaborative effort
479 necessary to create and evaluate the placement system, but the final decisions regarding
480 the system should remain in the hands of faculty experts.

481
482 While the use of multiple measures is supported by the research on community college
483 placement processes, integrating multiple measures into placement processes is not
484 without costs and challenges. Multiple measures need to be carefully examined and
485 matched to the needs of particular college communities, so local colleges can extend
486 resources and time to validate their measures. Discipline faculty, counseling faculty, and
487 the local academic senate need to be certain that the multiple measures selected by their
488 college contribute meaningfully to the placement process. All parties involved with
489 placement of students need to evaluate the ways in which the use of multiple measures
490 fits into existing placement processes and to build in periodic review of how well the
491 placement process results in student success. There are varying approaches to
492 collaboration regarding assessment and multiple measures and two possible scenarios are
493 presented in Appendix d.

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496

497 **Recommendations for Local Senates**

498 **See checklist of recommendations in Appendix C**

499 • Ensure that assessment procedures and the way placement decisions are made are
500 clearly communicated to students. Students should be informed about the entire
501 set of multiple measures that are being used to assess their level of knowledge and
502 skill and how those multiple measures will be analyzed.

503

504 • Ensure that multiple measures are applied consistently for all students.

505

506 • Collect multiple measures before students complete assessment tests or as part of
507 the assessment test process so that multiple measures are being applied to all
508 students who are assessed, not just those who appeal their assessments.

509

510 • Use measures that have a high degree of predictive validity. This may require
511 longitudinal analysis of the predictive value of specific measures within service
512 areas. For example, some communities may find relatively high predictive
513 validity for high school math grades whereas in other communities that measure
514 may be less useful.

515

516 • Involve discussions by the local senate and discipline faculty at each college.

517

518 • Create a local selection of validated measures policy and data.

519

520 • Include periodic review of multiple measures assessment policies

521

522 • Provide discipline faculty and counselors with information on why certain
523 multiple measures have been selected for use at the college and the role that
524 multiple measures can play in accurate placement.

525

526 • Strive to produce an objective process and carefully examine the use of local
527 measures that may be overly subjective, such as interviews.

528

529 • Make weighting of multiple measures transparent and research based.

530

531 • Consider a regional consortium among the counseling faculty and discipline
532 experts to discuss how assessment outcomes might be portable and accurate

533

534

535 Conclusion:

536 The role of multiple measures is to enable an institution to look at a variety of student
537 characteristics to successfully place each student in the courses best suited to his or her
538 skills and abilities. Multiple measures are clearly mandated, and yet they are a challenge
539 to implement. Institutions must rely upon multiple measures rather than a single test or
540 any other single measure because research has shown that no single measure is fair or
541 adequate to make the complex prediction about a student's success. Data collected on the
542 practices of CCCs demonstrates that no real consistency exists in what measures are used
543 or how multiple measures are implemented at different colleges. Other than the common
544 use of commercial tests, the similarities of multiple measures among the CCCs is very
545 small.

546 While the necessity to use more than one measure is undeniably supported by Title 5
547 requirements and by research, the determination of which set of measures to use is much
548 more complicated. The value of the multiple measures vary when they are applied to
549 different courses, diverse colleges, and dissimilar students. Once the multiple measures
550 are decided upon, the application of the measures varies depending upon the policies of
551 the colleges. Some colleges rely wholly upon discipline faculty, while other colleges rely
552 more heavily on counselors. Some colleges value objective measures, other colleges see
553 the importance of including subjective measures with objective data, and still other
554 colleges allow student self-placement.
555

556 The low success rate in the classes where placement is most controlled should challenge
557 us to sharpen our use of multiple measures and to do more research, to work more
558 collegially, and to make better decisions based upon more data. Because this work is not
559 simple, the task demands collaborative thinking and cooperation between student services
560 and instruction. The significant costs to the student and the institution should lead
561 colleges to pursue better research targeting the viability of multiple measures and to make
562 a commitment to develop policies that evaluate the success of multiple measure
563 placements. Many of these issues are being studied as this paper is being finalized.
564 Prompt follow-up to this paper may be necessary, with more published information
565 describing statewide studies examining the use of high school data and other multiple
566 measures.

567

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Measure	Pros	Cons	Additional notes
Assessment using a standardized test			
Specific placement tests taken prior placement in college courses in English, Reading, ESL or Math e.g. Accuplacer, MDTP, CASAS etc. See appendix of 2013 approved assessment for placement tests	Standardized and comparable among students that have taken the test.	A single high stakes test may not reflect all the student's skills and abilities and may introduce testing bias. Accuracy may vary greatly, influenced by curriculum and test content alignment.	Requires cut score validation. Must be approved by CCCCCO. See appendix of approved tests.
California Standards Test (STAR test). This includes the EAP; early assessment program developed by the California State University system for early indicators for high school juniors	Standardized and comparable among students that have taken the test. EAP provides early indicators to allow high school students time to remediate before enrollment in college.	A single high stakes test which may not reflect all the student's abilities.	New testing focused on the common core will not include the EAP. Long Beach City College study indicated little correlation with actual outcomes in LBCC courses.
Prior educational achievement			
Self-reported high school or college GPA	Provides an aggregate measure of student achievement and motivation.	May not be reported accurately.	May be affected by the recency with which the skills or knowledge were acquired and the geographic location of the high school
High school (transcript) College transcript	Provides a documented aggregate measure of student achievement and motivation.	Concerns about high school GPA inflation and significant differences among high school practices.	In a narrow study at LBCC involving one high school district, researchers reported a high correlation with course success based upon high school course grades

Measure	Pros	Cons	Additional notes
			as the major placement measure outcomes. Some LBCC faculty question these reported results and note that placement through high school grades raised other significant issues that may have negatively impacted instruction.
Highest level of math, English or ESL	Provides discipline specific achievement.	Same as above.	May be affected by the recency and the alignment of the high school curriculum with the college curriculum.
Any senior level English and/or math course	English and math courses taken in the senior year of high school, when they are not required, are evidence of motivation.	This measure does not indicate a specific course level, but merely the completion of any a course in math or English.	
Advancement Placement (AP) course completion or AP scores or International Baccalaureate (IB) coursework, or test scores in HS	Provides discipline specific information about motivation and achievement.	Same as above.	Same as above.
Demographics and socioeconomic status			
Age	In some disaggregated data, age is correlated with success or lack of success.	This data is not consistent across ages or among specific discipline success.	Students claiming skills upgrade as their educational goal have very different outcomes by age than the general population.
Units planned	Evidence suggests that full-time status	Evidence in this area is limited and may not take	Planned units within a specific time frame are not always

Measure	Pros	Cons	Additional notes
	results in better success and part-time status results in poorer success.	into consideration other factors regarding full-time vs. part-time performance such as the economic or family conditions that allow full-time enrollment.	represented of the actual units completed.
Hours employed	Directly relates to student effort in CCSSE where limited work hours positively influence success.	This measure is self-reported and may therefore raise questions of accuracy. Work hours and times may vary having a positive effect during one period of time and a negative effect at another period of time.	The direct correlations are unknown and may involve many other factors and variables such as the actual hours and days worked or the relationship of work to the courses and content studied.
First Generation status (highest level of parental education)	Provides insight into student support needs but in no way assumes or predicts a student's ability.	Does not directly relate to skills and knowledge. This measure may reflect more on institutional support and outreach than on individual success.	Many data sources indicate when student capability is evident (even measured through diagnostic testing), success is more influenced by support than student performance. CCCs are currently examining more data to understand this variable.
Socioeconomic status (PELL grant or BOG recipient)	Provides insight into student support needs.	Does not directly relate to skills and knowledge.	Complex variable influenced by work hours and family responsibilities, but data indicates lower income students have a more difficult time with

Measure	Pros	Cons	Additional notes
			completion.
Parenthood or direct family responsibilities	Provides insight into student support needs and student responsibility.	Must be self-reported and may therefore raise questions of accuracy; potential time management issues.	Direct correlations are unclear. Some data in STEM indicates single parents have better success rates in CTE courses.
<p>Understanding motivational and maturity factors of students is complex and involves factors that have a potential of encouraging bias. The CCRC paper <i>Designing Meaningful Developmental Reform</i> (February 2013) asserts, “demographic variables such as gender, age, race, or ethnicity, which may have predictive value but would be unethical to consider in placement decisions.” Concerns exist that these socioeconomic factors may result in biased or discriminatory placement. On the other hand, these factors may provide useful prognostic data concerning the student service needs that then result in greater success.</p>			
Affective measures			
Motivation (self-reported)	Provides students’ own assessment of motivation level.	Self-reported information is very subjective.	Level of honesty may vary and motivation may vary based on circumstances; may fluctuate during the term.
Declaration of a major	Research indicates this correlates with success.	Declaration of a major is only helpful if it is a committed declaration.	Accuracy issues arise in the selection, recording, and changing of a major.
Other measurable factors that contribute to academic success			
Degrees, classifications or certifications	Completion of a series of study provides an aggregate measure of the student’s ability to complete academic goals in the same way a HS diploma provides information relevant to attendance and	Not all degrees and certificates provide the same level of information.	Some military training or proprietary schools have a lower degree of rigor or focus on skills without background.

Measure	Pros	Cons	Additional notes
	overall life success.		
Internships	Internships correlate well with success where content and skills are aligned.	The breadth and depth of the student's abilities are difficult to truly assess in order to place them in a specific course or program.	
Computer skills	Predictor of success.	This factor is commonly referred to as the "digital gap" and may measure socioeconomic status rather than student abilities.	Use of this as a multiple measure may result in bias, preferentially advantaging those with more money and access to personal computers and technology.
Program of study - Student education plan that begins in 8 th grade or HS and extends through college	Correlated with success.	Depends upon rigor, content, and alignment of the plan with realistic student goals.	SEPs vary widely with regard to quality and investment.
Employment history	Direct knowledge and skills correlation results in great success.	Lack of alignment of employment and course expectations may not correlate or contribute to course success.	May contribute to maturity and better success in many situations not just course taking.

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624 Appendix B

625 Current Commonly Used Multiple Measures Summarized from the CCCCCO Survey as
626 Analyzed by WestEd 2011 (N= 59 of 112 colleges)

Tests used for placement and the disciplines they are used for	Percent of respondents using this
	Total 57 of 59 (85%) colleges used tests
Accuplacer - English, Reading, Writing, ESL	68% (but varies depending on discipline it is used for e.g. only a few use this for ESL)
CELSA - ESL	42%
COMPASS - Math, Reading, Writing and ESL	33%
CTEP - Reading and writing	16%
MDTP -Math	36%
Locally developed multiple choice - Math, Reading, Writing and ESL	14%
Locally developed performance test - Math, Reading, Writing and ESL	16%
Educational Background Information	Percent of respondents using this
	Total 48 of 59 (81%) colleges used educational background
Length of time out of school	60%
Highest level of educational attainment	64%
High school GPA	79%
General Proficiency in math	44%

Grade in last math class completed	88%
Highest math course completed	90%
Length of time since last math class	79%
General Proficiency in reading and writing	44%
Grade in last English class completed	81%
Highest English course completed	52%
Number of years of high school English	63%
Plans Goals, and Experience	Percent of respondents using this Total 44 of 59 (75%) colleges used educational background
Student's Ed Goals	80%
Student's choice of major	68%
Number of units student plans to enroll in	77%
Highest math course student plans to take	48%
Time of day attending	45%
Students attitude toward studying	55%
Planned hours to study	61%
College Education	Percent of respondents using this Total 44 of 59 (75%) colleges used educational background
College GPA	50%
College units completed	50%

College degree earned (foreign)	55%
Other Characteristics	Percent of respondents using this Total 42 of 59 (71%) colleges used educational background
Age	55%
Veteran Status	60%
Importance of college to student	67%
Importance of college closest to student	55%
Hours employed	67%
time spent in extracurricular activities	36%
Time devoted to family commitments	38%
Perseverance with academic challenge	48%
Time spent reading English	48%
Ease of reading/writing in English	45%

627

628

629 Appendix C

630 Questions to ask to begin your placement process using multiple measures.

- 631 • What is your college's placement process?
- 632 • Does your college have an assessment and matriculation committee?
- 633 • Is your college's placement process based on data?
- 634 • Who decides the placement?
- 635 • Who communicates the assessment procedures and the way placement decisions
- 636 are made?
- 637 • How do students find out which multiple measures are being used to assess their
- 638 level of knowledge and skill and how those multiple measures will be analyzed?
- 639 • Is your college's process consistent?
- 640 • Is it used on all students?
- 641 • Do your college's multiple measures have predictive validity?
- 642 • Has the college determined the placement decisions results are successful
- 643 regardless of who makes them?
- 644 • Who was involved in deciding which multiple measures are used on your
- 645 campus?
- 646 • Does your college have a local selection of validated measures policy and data?
- 647 • Does the college use a periodic review of multiple measures assessment policies?
- 648 • Are discipline faculty and counselors given information on why certain multiple
- 649 measures have been selected for use at the colleges?
- 650 • Are discipline faculty and counselors given information on the role that multiple
- 651 measures can play in accurate placement?
- 652 • Does your college use interviews? If so, has there been a review of the placement
- 653 decisions and the success values to determine whether or not the interviews
- 654 improve the process?
- 655 • Is your college communicating with the local high schools?
- 656 • Have you talked to other local colleges in your area to determine what placement
- 657 processes they are using?

658

659

660 Appendix D

661 The following scenarios show very different local methods of establishing placement
662 processes and illustrate how discipline faculty, counselors, and researchers can work with
663 the local senate to establish the multiple measures and the process to place students
664 accurately into either prerequisites or target courses.

665

666 Scenario 1

667 Discipline faculty are actively involved in investigating the role placement plays in
668 student success. Faculty regularly request that cut scores and student success by course
669 be analyzed or researched. Over the last ten years, student success rates have risen
670 significantly in all courses in one particular academic sequence. Discipline faculty have
671 difficulty understanding the counselors' role in placement decisions and decide to review
672 the multiple measures process. The discipline faculty determine that the best way to
673 make the use of multiple measures more consistent is to include them as part of the
674 assessment test in the form of five additional multiple choice questions meant to assess
675 student motivation and prior achievement. This new assessment practice means that
676 counselors do not collect additional multiple measures after the assessment test is given
677 since the multiple measures are included as part of the assessment for all students.
678 Counselors do not use multiple measures to override assessment test decisions and self-
679 reported measures are worth very few points in the total assessment score and placement
680 process.

681

682 Scenario 2.

683

684 Each department that uses a test to place students into courses is asked to generate what
685 they intend their multiple measure process to be. At this point, each department has an
686 entirely separate set of desired measures. Next, the senate works with the counselors and
687 the college committee structure to hold a Multiple Measures Retreat. At this retreat the
688 relevant Title 5 sections are discussed and the intent of multiple measures is presented.
689 At the meeting, the participants determine to create a single survey—called the “Student
690 Success Inventory”—that can be given prior to assessment and that will address as many
691 multiple measure points as possible. Each assessment test might only use a few questions
692 from the survey, but collectively the survey is both concise and can be used from multiple
693 areas.

694 The survey is fully vetted by the local Assessment and Matriculation Committee and is
695 approved by the Academic Senate. The role of counseling is the subject of much
696 discussion, but ultimately the college leaves the decision to each individual department.
697 Some, such as mathematics, are comfortable with giving counselors considerable latitude
698 to use their professional judgment, but other departments, such as Learning Assistance,
699 desire a specific points-based model that leaves little authority to the individual evaluator.
700

701 The scenarios above demonstrate that all colleges have different processes for
702 establishing local processes.

703