Placement in a Post-AB 705 World

Craig Hayward, PhD
John Hetts, PhD
AB 705 Work Group
Wednesday, February 7, 2018
Agenda

• Requirements of AB 705
• Review of MMAP and Results to Date
• Adapting MMAP to AB 705
• Self-Reported Data and Durability of GPA
• Discussion
AB 705 (Irwin) requirements

- Use of high school performance data
- Use of “highly unlikely” standard
- Optimize student’s probability of completing transfer-level English and math* in their first year
- Optimize student’s probability of completing ESL sequence in three years

*Or intermediate algebra if that is the graduation requirement for the student’s program of study or educational goal
Review of the Multiple Measures Assessment Project (MMAP)
Data Set for the Models

• CCC students enrolled in an English, Math, Reading or ESL class with matching high school data in Cal-PASS Plus
  • ≈1 M cases for Math & English; ≈200k for Reading & ESL

• Bulk of data from 2008 through 2014
• Rules built from students with 4 years of high school data (≈25% of sample)
  – 70% probability of success or higher required for transfer placement

• MMAP code (http://bit.ly/MMAP_code)

Variables Explored in the Models

• High school unweighted cumulative GPA
• Grades in high school courses
• CST scores
• Advanced Placement (AP) course taking
• Taking higher level courses
• Delay between high school and community college
• HS English types (expository, remedial, ESL)
• HS math level (Elem Algebra, Integrated Algebra, Pre-Calculus)
# Transfer-Level Placement Recommendations

<table>
<thead>
<tr>
<th>Transfer Level Course</th>
<th>Direct Matriculant</th>
<th>Non-Direct Matriculant</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Algebra (STEM) Passed Algebra II (or better)</td>
<td>HS 11 GPA $\geq$ 3.2 OR</td>
<td>HS 12 GPA $\geq$ 3.2 OR</td>
</tr>
<tr>
<td></td>
<td>HS 11 GPA $\geq$ 2.9 AND Pre-Calculus C (or better)</td>
<td>HS 12 GPA $\geq$ 3.0 AND Pre-Calculus or Statistics (C or better)</td>
</tr>
<tr>
<td>Statistics (General Education/Liberal Arts) Passed Algebra I (or better)</td>
<td>HS 11 GPA $\geq$ 3.0 OR</td>
<td>HS 12 GPA $\geq$ 3.0 OR</td>
</tr>
<tr>
<td></td>
<td>HS 11 GPA $\geq$ 2.3 AND Pre-Calculus C (or better)</td>
<td>HS 12 GPA $\geq$ 2.6 AND Pre-Calculus (C or better)</td>
</tr>
<tr>
<td>English</td>
<td>HS 11 GPA $\geq$ 2.6</td>
<td>HS 12 GPA $\geq$ 2.6</td>
</tr>
</tbody>
</table>

Transitions and Intersegmental Trust

- Within systems: highly reliable student progression within a sequence after successful completion (C or better)
- HS to CCC transition:
  - >3/4 repeat one or more levels of math **successfully completed** in HS
  - ~1/2 repeat ≥ 2 levels of math
  - African Americans & Hispanics are ~60% more likely to repeat
  - Female students are ~20% more likely to repeat levels

**HS to CCC Math transition**

- **Repeat ≥4 levels**: 31%
- **Repeat ≥3 levels**: 19%
- **Repeat ≥2 levels**: 15%
- **Repeat 1 level**: 14%
- **Normal progress**: 12%
- **Jump 1 level**: 7%
- **Jump ≥2 levels**: 3%

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**Jump ≥2 levels**
**Jump 1 level**
**Normal progress**
**Repeat level**
**Repeat 2 levels**
**Repeat 3 levels**
**Repeat ≥4 levels**
Predictive Validity: GPA vs. Test
Compass, Accuplacer, Asset – North Carolina

From Bostian (2016), North Carolina Waves GPA Wand, Students Magically College Ready adapted from research of Belfield & Crosta, 2012 – see also Table 1)
Accuplacer, SAT, ACT - Alaska

California Community Colleges Data

**Predicting English Success by Level**

<table>
<thead>
<tr>
<th>Level</th>
<th>Accuplacer</th>
<th>11th Grade GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer</td>
<td>.10</td>
<td>.27</td>
</tr>
<tr>
<td>1 level below</td>
<td>.12</td>
<td>.24</td>
</tr>
<tr>
<td>2 levels below</td>
<td>.12</td>
<td>.25</td>
</tr>
<tr>
<td>3 levels below</td>
<td>.12</td>
<td>.18</td>
</tr>
<tr>
<td>4 levels below</td>
<td>.07</td>
<td>.21</td>
</tr>
</tbody>
</table>

**Predicting Math Success by Level**

<table>
<thead>
<tr>
<th>Level</th>
<th>Accuplacer</th>
<th>11th Grade GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer - STEM</td>
<td>.19</td>
<td>.24</td>
</tr>
<tr>
<td>Transfer - Stats</td>
<td>.16</td>
<td>.31</td>
</tr>
<tr>
<td>Transfer - GEM</td>
<td>.09</td>
<td>.26</td>
</tr>
<tr>
<td>1 level below</td>
<td>.21</td>
<td>.28</td>
</tr>
<tr>
<td>2 levels below</td>
<td>.11</td>
<td>.26</td>
</tr>
<tr>
<td>3 levels below</td>
<td>.11</td>
<td>.23</td>
</tr>
<tr>
<td>4 levels below</td>
<td>.05</td>
<td>.19</td>
</tr>
</tbody>
</table>
Results from the Field
Change in Transfer-Level Success After MMAP Implementation

Average Change in Math Success Rates 0%
Average Change in English Success Rates +2%
# English throughput comparisons

<table>
<thead>
<tr>
<th></th>
<th>Transfer-level success rates</th>
<th>2 year cohort completion rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traditional placement into</td>
<td>Difference</td>
</tr>
<tr>
<td></td>
<td>transfer-level</td>
<td>MMAP</td>
</tr>
<tr>
<td>Alameda* (2015-2016)</td>
<td>78%</td>
<td>78%</td>
</tr>
<tr>
<td>Berkeley (2015-2016)</td>
<td>73%</td>
<td>62%</td>
</tr>
<tr>
<td>Cañada+ (2014-2015)</td>
<td>76%</td>
<td>72%</td>
</tr>
<tr>
<td>Irvine Valley (2016F)</td>
<td>77%</td>
<td>85%</td>
</tr>
<tr>
<td>Laney* (2015-2016)</td>
<td>76%</td>
<td>71%</td>
</tr>
<tr>
<td>Las Positas (2016F)</td>
<td>75%</td>
<td>77%</td>
</tr>
<tr>
<td>Merritt* (2015-2016)</td>
<td>50%</td>
<td>56%</td>
</tr>
<tr>
<td>Mira Costa (2016F)</td>
<td>68%</td>
<td>80%</td>
</tr>
<tr>
<td>Norco (2016F)</td>
<td>69%</td>
<td>69%</td>
</tr>
<tr>
<td>SDCCD^ (2015F)</td>
<td>68%</td>
<td>79%</td>
</tr>
<tr>
<td>Shasta (2015S)</td>
<td>68%</td>
<td>67%</td>
</tr>
<tr>
<td>Sierra (2014F)</td>
<td>73%</td>
<td>79%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(average excluding Alameda, Laney, & Merritt)*

**Notes:** Success rates from MMAP Summary of Pilot College Results, throughput for students 1-2 levels below from CCCCO Basic Skills Cohort Progress Tracker from year prior

*Alameda, Laney, & Merritt have different structure at 1-2 levels below, +Cañada’s transfer-level courses appear miscoded in 2015-2016, ^SDCCD implementation was at district level - cohort progress tracker n/a at district level.
# Math Throughput Comparisons

<table>
<thead>
<tr>
<th></th>
<th>Transfer-level success rates</th>
<th>2 year cohort completion rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traditional</td>
<td>MMAP</td>
</tr>
<tr>
<td>Alameda (2015-2016)</td>
<td>85%</td>
<td>79%</td>
</tr>
<tr>
<td>Berkeley (2015-2016)</td>
<td>51%</td>
<td>46%</td>
</tr>
<tr>
<td>Cabrillo College (F2017)</td>
<td>56%</td>
<td>68%</td>
</tr>
<tr>
<td>Cañada+ (2014-2015)</td>
<td>76%</td>
<td>70%</td>
</tr>
<tr>
<td>Laney (2015-2016)</td>
<td>75%</td>
<td>77%</td>
</tr>
<tr>
<td>Merritt (2015-2016)</td>
<td>75%</td>
<td>71%</td>
</tr>
<tr>
<td>Norco (2016F)</td>
<td>59%</td>
<td>69%</td>
</tr>
<tr>
<td>SDCCD^ (2015F)</td>
<td>60%</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Success rates from MMAP Summary of Pilot College Results, throughput for students 1-2 levels below from CCCCO Basic Skills Cohort Progress Tracker from year prior.
*Alameda, Laney, & Merritt have different structure at 1-2 levels below, +Cañada’s transfer-level courses appear miscoded in 2015-2016, ^SDCCD implementation was at district level - cohort progress tracker n/a at district level.
## Summary of Differences Between Students Placed Traditionally and Students Placed by MMAP

<table>
<thead>
<tr>
<th>Comparison Group</th>
<th>Comparison</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students placed directly into transfer-level by existing method in same term</td>
<td>Success rates</td>
<td>MMAP success rates equal</td>
</tr>
<tr>
<td>Students placed 1 level below in previous year</td>
<td>Completion of transfer-level math in 2 years</td>
<td>MMAP throughput 41 percentage points higher</td>
</tr>
<tr>
<td>Students placed 2 levels below in previous year</td>
<td>Completion of transfer-level math in 2 years</td>
<td>MMAP throughput 53 percentage points higher</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comparison Group</th>
<th>Comparison</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students placed directly into transfer level by existing method in same term</td>
<td>Success rates</td>
<td>MMAP success rates 2 percentage points higher</td>
</tr>
<tr>
<td>Students placed 1 level below in previous year</td>
<td>Completion of transfer-level English in 2 years</td>
<td>MMAP throughput 26 percentage points higher</td>
</tr>
<tr>
<td>Students placed 2 levels below in previous year</td>
<td>Completion of transfer-level English in 2 years</td>
<td>MMAP throughput 40 percentage points higher</td>
</tr>
</tbody>
</table>
Overall Summary

– MMAP rules performing as expected
– Success rates of students placed by MMAP are just as high as students placed directly into transfer-level using the institutions traditional placement method
  • even though MMAP placement doubles to quintuples placement into transfer level courses
– Successful completion of the transfer level course (throughput) is 20 (English) to 40 (Math) percentage points higher compared to students placed even just one level below in previous year.
– Placement messaging should be done once with a single voice and specifically state the recommended course
– Implementation of MMAP rules is nuanced
  • For example, don’t use statistics rules to place into trigonometry or precalculus
– Collaboration between high schools and colleges has increased
Adapting MMAP to AB 705

It’s all about throughput.
Adapting MMAP to AB 705

- MMAP decision trees were based on identifying students who were highly likely to be successful
  - At least 70% probability of success in transfer-level

- Now, students can only be assigned to remediation if:
  - They are *highly unlikely* to succeed at the transfer-level class
  - **AND**
  - Remediation maximizes their probability of throughput
What is a “Throughput Rate”? 

- The probability of getting to and through a gateway course within a specified period of time.

- **Throughput rate (AB 705):** The proportion of a cohort of students who complete the transferable or gateway math or English course within two primary semesters or three primary quarters of entering their first course in the sequence.
# Transfer-Level English Throughput Rates

<table>
<thead>
<tr>
<th>GPA Range</th>
<th>Pass Rate</th>
<th>Students Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11th grade GPA &lt; 1.9</td>
<td>43%</td>
<td>~10%</td>
</tr>
<tr>
<td>11th grade &gt;= 1.9 and D or worse</td>
<td>49%</td>
<td>~5%</td>
</tr>
<tr>
<td>in 11th grade English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11th grade &gt;= 1.9 and C- or better in 11th grade English</td>
<td>62%</td>
<td>~23%</td>
</tr>
<tr>
<td>11th grade GPA &gt;= 2.6</td>
<td>80%</td>
<td>~62%</td>
</tr>
</tbody>
</table>
Maximizing Throughput: English

One-year English throughput rate by placement level for students with less than a 1.9 high school GPA

- 43% pass rate
- ~10% of students

11th grade GPA < 1.9

<table>
<thead>
<tr>
<th>Placement Level</th>
<th>Throughput Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer-level</td>
<td>43%</td>
</tr>
<tr>
<td>One-level below</td>
<td>13%</td>
</tr>
<tr>
<td>Two-levels below</td>
<td>2%</td>
</tr>
<tr>
<td>Three-levels below</td>
<td>0%</td>
</tr>
<tr>
<td>Four-levels below</td>
<td>0%</td>
</tr>
</tbody>
</table>
Statistics
Decision Tree

Root Node

\[ \text{HS	extsubscript{11} GPA_CUM} \geq 3 \]

Node 1

\[ \text{HS	extsubscript{11} GPA_CUM} \geq 2.3 \]

Node 7

\[ \text{PRE	extsubscript{CALC} UP11 C} \geq 0.5 \]

Node 8

\[ \text{ALG II UP11 C} \geq 0.5 \]

Node 10

0.4
12%

Node 12

0.49
10%

Node 11

0.58
19%

Node 9

0.7
4%

Node 4

0.7
16%

Node 6

0.81
8%

Node 5

0.88
30%

Node 3

Internal Node/split

Terminal node/leaf

Probability of success

Percent of students in leaf
AB 705 Analysis of Pass Rates of Groups of Students in Transfer-level Statistics

| GPA Range                      | Course Requirement                             | Pass Rate | Students
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11th grade GPA &lt; 2.3</td>
<td></td>
<td>40%</td>
<td>~12%</td>
</tr>
<tr>
<td>11th grade GPA &gt;= 2.3 and C- or worse in Algebra II</td>
<td></td>
<td>49%</td>
<td>~10%</td>
</tr>
<tr>
<td>11th grade GPA &gt;= 2.3 and C or better in Algebra II</td>
<td></td>
<td>58%</td>
<td>12%</td>
</tr>
<tr>
<td>11th grade GPA &gt;= 2.3 and C or better in Pre-Calculus</td>
<td></td>
<td>70%</td>
<td>~4%</td>
</tr>
<tr>
<td>11th grade GPA &gt;= 3.0</td>
<td></td>
<td>80%</td>
<td>~62%</td>
</tr>
</tbody>
</table>
Maximizing Throughput: Statistics

One-year Math throughput rate by placement level for students with less than a 2.3 high school GPA

- 40% pass rate
- ~12% of students

Transfer-level: 40%
One-level below: 10%
Two-levels below: 2%
Three-levels below: 2%
Four-levels below: 1%
The BSTEM ‘Intent Cohort’

• Which students intend to pursue a calculus-oriented Business-STEM math pathway from one-level below?
• Some students have a goal of a terminal associate’s degree and one-level below satisfies their requirement
• Some students intend to pursue a Statistics or Liberal Arts Math pathway
• How to distinguish intent?
Identifying the Intent Cohort

Ed. Goals of Students Starting at One-level below in Math

- Associate & Transfer: 57.2%
- Transfer, no Associate: 14.8%
- Associate, no Transfer: 3.1%
- Vocational Deg., no Transfer: 0.5%
- Discover Career Interests: 0.5%
- Acquire Job Skills: 2.7%
- Update Job Skills: 1.9%
- Maintain Cert/License: 0.3%
- Personal Development: 0.6%
- High School or GED credits: 2.9%
- Basic Skills: 1.8%
- Noncredit to Credit Courses: 9.3%
- Coursework for University: 0.1%
- Terminal AA/AS, Certificate, etc. (11.6%)
The BSTEM ‘Intent Cohort’

- Remove those with a non-transfer educational goal (11.6%)
- Remove those on the SLAM path
  - Of those who progress to transfer-level math, 75% take SLAM vs. Precalculus, Calculus, Trig., or Business Calculus
  - Reduce remaining one-level below starting cohort by 75%
- Product of this process is the BSTEM intent cohort
  - This will be the denominator for BSTEM throughput rates
  - The denominator is reduced to 3,624 from 14,499
Figure 5. Pre-Calculus – L0 Y Pre-Calculus DM

- **HS_11_GPA_CUM >= 3.1**
  - **no**
  - **HS_11_GPA_CUM >= 2.6**
    - **PRE_CALC_UP11 >= 0.5**
      - 0.38 (16%)
    - 0.49 (5%)
  - **yes**
    - **HS_11_GPA_CUM >= 3.4**
      - **CALC_UP11 >= 0.5**
        - 0.67 (21%)
        - 0.72 (2%)
      - **CALC_UP11_BMINUS >= 0.5**
        - 0.76 (20%)
        - 0.94 (3%)
Pre-Calculus Throughput Rates

AB 705 Analysis of Groups of Students in Precalculus

11th grade GPA < 2.6 and no Precalc. in HS
- 38% pass rate
- ~16% of students

11th grade GPA < 2.6 with Precalculus in HS
- 49% pass rate
- ~5% of students

11th grade GPA >=2.6 and < 3.1
- 56% pass rate
- ~36% of students

11th grade GPA >=3.1 and < 3.4
- 67% pass rate
- ~21% of students

11th grade GPA >=3.4
- 78% pass rate
- ~23% of students
Maximizing Throughput: Pre-Calculus

One-year BSTEM throughput rate by placement level for students with less than a 2.6 high school GPA and no HS precalculus.

- Transfer-level: 38% pass rate
- One-level below: 13% pass rate
- Two-levels below: 1% pass rate
- Three-levels below: 0% pass rate
- Four-levels below: 0% pass rate

11th grade GPA < 2.6 and no Precalc. in HS
- 38% pass rate
- ~16% of students
Pre-Calculus Lowest Node

- 3,200 students with < 2.6 HSGPA and no precalculus in high school by grade 11 began at one-level below transfer math with intent to pursue a BSTEM path
  - 1,035 attempt a BSTEM class within one year (32.3%)
  - 453 are successful in any BSTEM class, including College Algebra (14.2%)
- Throughput from one-level below into BSTEM is 14.2%
- If placed directly into Precalculus, throughput is 38%
38% pass rate? Are you serious?

• While we may not be happy with a 38% probability of passing a transfer-level course, it represents students’ best shot at making it through the transfer-level work.

• Co-requisite remediation is an option that has been used in other states and at Cuyamaca College to increase the pass rates (and throughput) of students with lower probabilities of academic success.
Gateway Momentum in Math at Cuyamaca

Completion of transfer-level math before and after change by assessment level

- Three+ Levels Below: Fall 2013 Cohort 4%, Fall 2016 Cohort 56%
- Two Levels Below: Fall 2013 Cohort 19%, Fall 2016 Cohort 70%
- One Level Below: Fall 2013 Cohort 36%, Fall 2016 Cohort 66%
- All: Fall 2013 Cohort 23%, Fall 2016 Cohort 67%

Completion of transfer-level math before and after change by ethnicity

- Asian: Fall 2013 Cohort 33%, Fall 2016 Cohort 75%
- African American: Fall 2013 Cohort 6%, Fall 2016 Cohort 55%
- Hispanic: Fall 2013 Cohort 15%, Fall 2016 Cohort 65%
- White: Fall 2013 Cohort 16%, Fall 2016 Cohort 76%
- All: Fall 2013 Cohort 15%, Fall 2016 Cohort 69%
Percent of Remedial Students Who Complete an Associated Gateway Course

<table>
<thead>
<tr>
<th>State</th>
<th>English Prerequisite</th>
<th>English Corequisite</th>
<th>Math Prerequisite</th>
<th>Math Corequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>64%</td>
<td>31%</td>
<td>63%</td>
<td>20%</td>
</tr>
<tr>
<td>Georgia</td>
<td>71%</td>
<td>16%</td>
<td>64%</td>
<td>29%</td>
</tr>
<tr>
<td>Indiana</td>
<td>55%</td>
<td>37%</td>
<td>N/A</td>
<td>12%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>64%</td>
<td>31%</td>
<td>64%</td>
<td>14%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>68%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(In two years for prerequisite models, in first year for corequisites)
Successful Completion Within One Year vs. Corequisite Results by Testing Level - Tennessee

Results of TBR Full Implementation
Co-requisite Writing in Community Colleges

Results of TBR Full Implementation
Co-requisite Mathematics in Community Colleges

Considerations on the use of GPA: Self-Report and Shelf Life
Self-Reported HSGPA as Potential Backup

- UC & others uses self-report in admissions, verifying after admission
  - 2008: 9 campuses, 60000+ students. No campus had >5 discrepancies b/w reported grades and transcripts: bit.ly/UCSelfReportGPA

- College Board: Shawn & Matten, 2009: “Students are quite accurate in reporting their HSGPA”, r(40,299) = .73: bit.ly/CBSRGPA

- ACT brief found SR HSGPA to be highly correlated with students actual GPA: ACT, 2013: r(1,978) = .84 bit.ly/ACTSRGPA
## GPA vs. Self-Reported HSGPA

<table>
<thead>
<tr>
<th>HSGPA Level</th>
<th>N</th>
<th>Mean HSGPA</th>
<th>Mean diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Actual</td>
<td>Self-reported</td>
</tr>
<tr>
<td>3.50–4.00</td>
<td>599</td>
<td>3.79</td>
<td>3.75</td>
</tr>
<tr>
<td>3.00–3.49</td>
<td>451</td>
<td>3.24</td>
<td>3.23</td>
</tr>
<tr>
<td>2.50–2.99</td>
<td>408</td>
<td>2.81</td>
<td>2.76</td>
</tr>
<tr>
<td>2.00–2.49</td>
<td>265</td>
<td>2.24</td>
<td>2.35</td>
</tr>
<tr>
<td>1.50–1.99</td>
<td>172</td>
<td>1.77</td>
<td>2.04</td>
</tr>
<tr>
<td>0.00–1.49</td>
<td>85</td>
<td>1.03</td>
<td>1.85</td>
</tr>
<tr>
<td>Total</td>
<td>1,980</td>
<td>2.95</td>
<td>3.02</td>
</tr>
</tbody>
</table>

Self-Reported High School Transcript Data

• >70 CCCs are collecting self-reported data through Open CCCApply application
  – Includes mix of pilot and non-pilot colleges

• Working on analyzing validity of self-reported data in our system
  – ERP just received full cut of CCC Apply data

• Preliminary analysis on earlier data cut shows reasonable but (albeit not perfect) reliability between self-reported transcript data and actual transcripts
Preliminary Self-Report Analysis

• Overall strong correlation between self-reported high school GPA and actual GPA observed: $r = .75$ (n=12,048)

• Lower GPA in ERP data less likely to correspond with self-report

• Correspondence could be improved by
  – Encouraging students to have transcripts ready during application
  – Suggesting that inaccurate information could invalidate application
## Preliminary Analysis: Medians
### GPA vs. Self-Reported HSGPA – CCC Apply

<table>
<thead>
<tr>
<th>HSGPA Level</th>
<th>N</th>
<th>Median HSGPA</th>
<th>Median diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Actual</td>
<td>Self-reported</td>
</tr>
<tr>
<td>3.50-4.00</td>
<td>2,600</td>
<td>3.69</td>
<td>3.80</td>
</tr>
<tr>
<td>3.00-3.49</td>
<td>4,026</td>
<td>3.23</td>
<td>3.40</td>
</tr>
<tr>
<td>2.50-2.99</td>
<td>4,203</td>
<td>2.75</td>
<td>3.00</td>
</tr>
<tr>
<td>2.00-2.49</td>
<td>3,645</td>
<td>2.26</td>
<td>2.70</td>
</tr>
<tr>
<td>1.50-1.99</td>
<td>2,327</td>
<td>1.79</td>
<td>2.50</td>
</tr>
<tr>
<td>0.00-1.49</td>
<td>869</td>
<td>1.30</td>
<td>2.20</td>
</tr>
<tr>
<td>Total</td>
<td>17,670</td>
<td>2.74</td>
<td>3.00</td>
</tr>
</tbody>
</table>
Decay Function of the Predictive Validity of High School GPA: Math

Decay function of the predictive validity of HSGPA for success in first community college math class - Overall

Delay Between High School Graduation and College Entry

Correlation of HS GPA with CC Math Grade

- Predictive validity
- Average Accuplacer Predictive Validity
Decay Function of the Predictive Validity of High School GPA: English

Decay function of the predictive validity of HSGPA for success in first community college English class.

Correlation of HS GPA with CC English Grade

Delay between High School Graduation and College Entry

- High School GPA
- Average Accuplacer Predictive Validity

0 Years Delay: .33
1 Year Delay: .33
2 Years Delay: .28
3 Years Delay: .24
4 Years Delay: .22
5 Years Delay: .21
6 Years Delay: .21
7 Years Delay: .19
8 Years Delay: .19
9 Years Delay: .14
10+ Years Delay: .13
Discussion
MMAP Research Team

Terrence Willett
The RP Group
twillett@rpgroup.org

Mallory Newell
The RP Group
newellmallory@deanza.edu

Craig Hayward
The RP Group
chayward@rpgroup.org

Kristen Fong
The RP Group
kfong@rpgroup.org

Rachel Baker
UC Irvine
rachelbb@uci.edu

Daniel Lamoree
Educational Results Partnership
dlamoree@edresults.org

Peter Bahr
University of Michigan
prbahr@umich.edu

John Hetts
Educational Results Partnership
jhetts@edresults.org

Ken Sorey
Educational Results Partnership
ken@edresults.org