Does Introduction to College Math Prepare Students for Success in Gateway Math Courses?

May 12, 2017
Smarter Balanced Placement Policy for UH System

• In Dec. 2014, the Chief Council of Academic Officer and the Council of Student Affairs Officers approved the use of SB Scores for PLACEMENT purposes only
• For Math and English/Language Arts entry level courses only
• Scores valid for 24 months
• Pilot for graduating classes of 2016, 2017, 2018
Warning!
Introduction to College Mathematics

- ACCN: MIC1200
- Pilot for 2015-2016 Academic Year
  - Pearl City (5 classes), Farrington (1 class), Waialua (1 class), Kapaʻa (1 class)
- Scaling up for 2016-2017 year
  - Aiea, Castle, Kahuku, King Kekaulike, Leilehua, Mililani, Molokai, Pahoa, Waiakea, Waianae, Waimea
- Scaling up for 2017-2018
  - Kauaʻi, Kealakehe, Kohala, Konawaena, Waipahu
Assessment of Pilot

• Tracking Student Success into Gateway Courses at UH

• Student Surveys/Focus Groups

• Instructor Interviews/Focus Groups

• External Evaluation for 2016-2017 (Currently being conducted)
Successes

• Practical placement option (in lieu of Compass/Accuplacer) for Early College
• Improved student performance for those previously unsuccessful in math
• Students show improved self-efficacy regarding math skills
• Viable option for fourth year of math for those scoring 1, 2, or 3
• Teacher satisfaction with strategies/materials
Student Comments

• I scored a 2 because math isn't my best subject; but when taking this course, I actually enjoyed math.

• Everything we did was helpful because if we didn't understand something we had different ways to help us understand.

• To me it doesn't matter what score you get (on SB). I recommend this class to anyone who is willing to challenge themselves.

• This class was very interactive, and it has definitely improved my view of math.

• I'm not sure I would have gone to college had I not taken this class.

• It didn't change my mind about going to college as I was always planning to go. However, it helped me better understand college and explore my options.
Teachers’ Voices

• Teachers need to have contacts and resources outside the school and understand the transitional needs of students to move from high school to college
• Students are able to see math in real-life situations. The math is also at a level where students can really grasp the understanding behind it. That is where real learning takes place.

• Teachers need to be willing and grow with their students to model the growth mindset.
• All high schools should offer this class because we teach to be a better person, not just a better student.
• “Grit” is the key in my classes and helps with the self-directed learner, seeking perseverance, and trying to think creatively outside the box.
Lessons Learned

• Timing for the placement of students

• Materials
  – Electronic Text
  – Seed money for project based activities

• Messaging to counselors and registrars
Pilot Results: HIDOE Grades

Course Grade Distribution

Summary

• 4 schools (8 classes)
• 146 students
• 86% earned a grade of A or B
Of the 146 Intro to College Math pilot participants who graduated in 2016, **36% met the UH placement policy criteria** because of SB score of 2 and grade of B or better in the course.
Pilot participants had higher college enrollment rates.
Of pilot participants attending a UH campus, nearly \( \frac{3}{4} \) enrolled in a college level math at UH by Spring 2017.

- Passed college level math by Fall 2016: 43%
- Enrolled in college level math Spring 2017: 30%
- Below college math: 4%
- No math at UH: 23%
Of pilot participants attending a UH campus, nearly \( \frac{3}{4} \) enrolled in a college level math at UH by Spring 2017.
Among those who qualified for college placement at UH, **MATH 103** was more popular than **MATH 100/115**.

Any college level math course attempted by Spring 2017

<table>
<thead>
<tr>
<th>Smarter Balanced Levels 3-4 (n=22)</th>
<th>MATH 100/115</th>
<th>MATH 103</th>
<th>Other college math</th>
<th>No college math</th>
</tr>
</thead>
<tbody>
<tr>
<td>18%</td>
<td>45%</td>
<td>14%</td>
<td></td>
<td>23%</td>
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</table>

<table>
<thead>
<tr>
<th>Smarter Balanced Level 2 &amp; B or better (n=24)</th>
<th>MATH 100/115</th>
<th>MATH 103</th>
<th>Other college math</th>
<th>No college math</th>
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</thead>
<tbody>
<tr>
<td>33%</td>
<td>46%</td>
<td>13%</td>
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<td>8%</td>
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<table>
<thead>
<tr>
<th>Did Not Qualify for Placement SBA= 2 &amp; C or below, SBA=1, or No Score (n=24)</th>
<th>MATH 100/115</th>
<th>MATH 103</th>
<th>Other college math</th>
<th>No college math</th>
</tr>
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<tbody>
<tr>
<td>38%</td>
<td>21%</td>
<td>13%</td>
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<td>29%</td>
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Majority of graduates who took a college level math by Fall 2016 passed their courses.
Other Transition Course Work

• English Language Arts Transition Course
  – Expository Reading and Writing Course created by California State University
  – Pilot for 2017-2018 Academic Year
  – Schools: Castle HS, Farrington HS, Mililani HS, Pearl City HS, Waialua HS

• Middle School Transition Course
  – 7th grade intervention so students are “on-track” for 8th grade math and, subsequently, ALG 1 in 9th grade
  – 7th grade intervention so students are eligible for ALG 1 in 8th grade