Corequisite Mathematics – Systemwide Data Analysis

Corequisite Mathematics Academy
April 4, 2018
Chris Tingle
Presentation Outline

Learning Support Enrollment Trends
Corequisite Student Course Pass Rates
First-time Freshmen Corequisite Student Outcomes
Next Steps for Research
Learning Support Enrollment Trends

Report on trends in learning support enrollment and placement from the past five fall terms.

Identify the internal and external factors that have led to shifts in learning support placement and enrollment.
Learning Support (LS) Enrollment by Subject Area

<table>
<thead>
<tr>
<th></th>
<th>Fall 2013</th>
<th>Fall 2014</th>
<th>Fall 2015</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Learning Support</td>
<td>18,182</td>
<td>16,787</td>
<td>15,603</td>
<td>14,050</td>
<td>15,216</td>
</tr>
<tr>
<td>Math Learning Support</td>
<td>15,675</td>
<td>13,821</td>
<td>8,168</td>
<td>6,715</td>
<td>6,831</td>
</tr>
<tr>
<td>Writing Learning Support</td>
<td>7,087</td>
<td>6,912</td>
<td>7,375</td>
<td>6,841</td>
<td>7,567</td>
</tr>
<tr>
<td>Reading Learning Support</td>
<td>6,266</td>
<td>5,893</td>
<td>7,161</td>
<td>6,448</td>
<td>7,598</td>
</tr>
</tbody>
</table>
What impact did the Promise have on LS enrollment?

<table>
<thead>
<tr>
<th>First-time Freshmen (FTF)</th>
<th>Fall 2013</th>
<th>Fall 2014</th>
<th>Fall 2015</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-time Freshmen (FTF)</td>
<td>18,139</td>
<td>18,216</td>
<td>22,732</td>
<td>21,305</td>
<td>21,620</td>
</tr>
</tbody>
</table>

First-time Freshmen LS Placement Rates by Subject Area

Note: First-time Freshmen (FTF) includes full-time and part-time as well as summer-returning-fall students.
Despite the Promise, why did LS math enrollment decline?

**SAILS Math Completers**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>410</td>
<td>5,625</td>
<td>9,967</td>
<td>13,040</td>
<td>12,694</td>
<td></td>
</tr>
</tbody>
</table>

**Fall LS Enrollment by Number of Subjects**

- **1 LS Subject**
  - 2014: 57%
  - 2015: 58%
- **2 LS Subjects**
  - 2014: 27%
  - 2015: 39%
- **3 LS Subjects**
  - 2014: 16%
  - 2015: 3%
Why did LS placement and enrollment increase in fall 2017?

**ACT Math**
- First-time Freshmen
- Fall 2015: 18,948
- Fall 2016: 17,679
- Fall 2017: 18,353
- % Testing Out LS Math: 37% (Fall 2015), 35% (Fall 2016), 40% (Fall 2017)

**SAT Math**
- First-time Freshmen
- Fall 2015: 229
- Fall 2016: 201
- Fall 2017: 255
- % Testing Out LS Math: 29% (Fall 2015), 33% (Fall 2016), 50% (Fall 2017)

**Compass/Accuplacer Math**
- First-time Freshmen
- Fall 2015: 5,387
- Fall 2016: 5,307
- Fall 2017: 4,696
- % Testing Out LS Math: 23% (Fall 2015), 25% (Fall 2016), 10% (Fall 2017)

*Accuplacer and Compass test instances are combined for this analysis. The large majority of fall 2017 tests are Accuplacer. Prior to fall 2017, all tests are Compass.*
Why did LS placement and enrollment increase in fall 2017?

Adult First-time Freshmen Placed in Learning Support

- **Math**
  - Fall 2016: 66%
  - Fall 2017: 85%

- **Writing**
  - Fall 2016: 29%
  - Fall 2017: 51%

- **Reading**
  - Fall 2016: 22%
  - Fall 2017: 38%
Corequisite Student Course Pass Rates

Focus on all community college corequisite students enrolled in fall terms, without comparisons to prerequisite or university students.

Identify gaps in college course pass rates for corequisite students from various subpopulations.

Display gaps in college course pass rates for corequisite students as compared to students enrolled in only college level coursework.

Provide first-term outcomes of corequisite students disaggregated by course results.
Corequisite Student College Level (CL) Course Pass Rates

Note: Pass Rate = Percent of students receiving a grade of A, B, C, D, passing, or satisfactory.
Corequisite Math Student CL Pass Rates, by ACT Subscore

<table>
<thead>
<tr>
<th>ACT Subscore</th>
<th>Fall 2015</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>29%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>34%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>41%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>67%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other/No ACT</td>
<td>63%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Coreq. Math Student CL Pass Rates, by Subpopulation (F17)

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>65%</td>
<td>53%</td>
</tr>
<tr>
<td>Pell</td>
<td>53%</td>
<td>59%</td>
</tr>
<tr>
<td>URM</td>
<td>46%</td>
<td>61%</td>
</tr>
<tr>
<td>Male</td>
<td>52%</td>
<td>58%</td>
</tr>
<tr>
<td>Part-time</td>
<td>56%</td>
<td>55%</td>
</tr>
</tbody>
</table>

Fall 2017 Corequisite Pass Rate 56%

Note: Adult = Age 25 or Older. URM = Race/Ethnicities of Alaskan Native, Black, Hispanic, American Indian, Pacific Islander, and Multiracial.
Math Student CL Pass Rates, by Placement and Subpop. (F17)

- Total All Students: 71%
- Adult: 65% 67%
- Pell: 53% 64%
- URM: 46% 61%
- Male: 52% 68%
- Part-time: 56% 77%

Note: Total all student pass rate for college level students includes only students enrolled in same college level courses as used for co-requisite math.
Math Student Pass Rates, by Course Enrolled (F17)

**College Level Course Enrolled Corequisite Students**

- Algebra Essentials: 61%
- Intermediate Algebra: 10%
- Liberal Arts Math: 12%
- Finite Math: 14%
- Statistics: 3%

**Enrolled Student Pass Rate by Math Course**

- Algebra Essentials: 56% Corequisite Enrolled, 67% College Level Only
- Intermediate Algebra: 57% Corequisite Enrolled, 69% College Level Only
- Liberal Arts Math: 62% Corequisite Enrolled, 73% College Level Only
- Finite Math: 49% Corequisite Enrolled, 69% College Level Only
- Statistics: 54% Corequisite Enrolled, 71% College Level Only
- Total All Courses: 56% Corequisite Enrolled, 71% College Level Only

Corequisite Math Student Outcomes, by Results (F17)

### Corequisite Math Student Distribution by Course Results

- **3,405** students in total.
- **2,198** Pass Both
- **691** Pass LS Only
- **209** Pass CL Only
- **111** Fail Both

### Corequisite Math Student Outcomes by Course Results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pass Both</th>
<th>Pass CL Only</th>
<th>Pass LS Only</th>
<th>Fail Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percent Students</strong></td>
<td>52%</td>
<td>3%</td>
<td>11%</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Avg. ACT Math</strong></td>
<td>16.5</td>
<td>15.9</td>
<td>16.1</td>
<td>15.7</td>
</tr>
<tr>
<td><strong>Avg. Hours Attempt</strong></td>
<td>12.7</td>
<td>12.9</td>
<td>13</td>
<td>12.6</td>
</tr>
<tr>
<td><strong>Avg. Hours Earn</strong></td>
<td>12.2</td>
<td>8.4</td>
<td>7.7</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Earn/Attempt Ratio</strong></td>
<td>96%</td>
<td>65%</td>
<td>59%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Avg. Term GPA</strong></td>
<td>3.0</td>
<td>1.6</td>
<td>1.6</td>
<td>1.2</td>
</tr>
<tr>
<td>*<em>Fall/Spring Retention Rate</em></td>
<td>91%</td>
<td>83%</td>
<td>70%</td>
<td>36%</td>
</tr>
</tbody>
</table>

### College Level Only Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pass CL</th>
<th>Fail CL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percent Students</strong></td>
<td>71%</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Avg. ACT Math</strong></td>
<td>20.5</td>
<td>18.7</td>
</tr>
<tr>
<td><strong>Avg. Hours Attempt</strong></td>
<td>11.4</td>
<td>12.2</td>
</tr>
<tr>
<td><strong>Avg. Hours Earn</strong></td>
<td>10.7</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Earn/Attempt Ratio</strong></td>
<td>94%</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Avg. Term GPA</strong></td>
<td>3.0</td>
<td>1.6</td>
</tr>
<tr>
<td>*<em>Fall/Spring Retention Rate</em></td>
<td>84%</td>
<td>47%</td>
</tr>
</tbody>
</table>

**Note:** Outcomes are based on combined hours and GPA (includes both college and learning support courses).

*Fall 2017-to-Spring 2018 retention rate is preliminary as it is based on spring 2018 census enrollment. Rate is defined in next section.*
First-time Freshmen Corequisite Student Outcomes

Report first-time freshmen corequisite student outcomes in comparison to students enrolled in only college level coursework, as well as how corequisite student outcomes vary by subpopulation.

Metric 1: Fall-to-Spring Retention

Metric 2: Fall-to-Fall Retention

Subpopulations: Adult, Pell, Underrepresented Minority, and Part-time
FTF Fall-to-Spring (FS) Retention, by Placement

Note: Fall-to-Spring Retention = Student graduated at the end of the fall term or was enrolled the next spring. Both outcomes are inclusive of any community college.
Note: First-time Freshmen (FTF) includes full-time and part-time as well as summer-returning-fall students.
* Fall 2017-to-Spring 2018 retention rate is preliminary as it is based on spring 2018 census enrollment.
FTF Fall-to-Spring Retention, by Subpopulation (F17*)

### Fall-to-Spring Retention

#### Any Corequisite

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time</td>
<td>59%</td>
<td>73%</td>
</tr>
<tr>
<td>URM</td>
<td>69%</td>
<td>73%</td>
</tr>
<tr>
<td>Pell</td>
<td>71%</td>
<td>71%</td>
</tr>
<tr>
<td>Adult</td>
<td>72%</td>
<td>71%</td>
</tr>
</tbody>
</table>

#### College Level Only

<table>
<thead>
<tr>
<th>Subpopulation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time</td>
<td>60%</td>
<td>82%</td>
</tr>
<tr>
<td>URM</td>
<td>76%</td>
<td>80%</td>
</tr>
<tr>
<td>Pell</td>
<td>78%</td>
<td>82%</td>
</tr>
<tr>
<td>Adult</td>
<td>72%</td>
<td>80%</td>
</tr>
</tbody>
</table>

**Corequisite FS Rate:** F17-S18  
71%

**College Level FS Rate:** F17-S18  
80%

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**Note:** Adult = Age 25 or Older. URM = Race/Ethnicities of Alaskan Native, Black, Hispanic, American Indian, Pacific Islander, and Multiracial.

* Fall 2017-to-Spring 2018 retention rate is preliminary as it is based on spring 2018 census enrollment.
FTF Fall-to-Fall (FF) Retention, by Placement

Note: Fall-to-Fall Retention = Student graduated prior to the next fall or was enrolled the next fall. Both outcomes are inclusive of any community college.
FTF Fall-to-Fall Retention, by Subpopulation (F16)

**Fall-to-Fall Retention**

**Any Corequisite**

- Part-time:
  - Yes: 41%
  - No: 49%
- URM:
  - Yes: 45%
  - No: 49%
- Pell:
  - Yes: 46%
  - No: 51%
- Adult:
  - Yes: 50%
  - No: 48%

**College Level Only**

- Part-time:
  - Yes: 32%
  - No: 64%
- URM:
  - Yes: 50%
  - No: 62%
- Pell:
  - Yes: 59%
  - No: 60%
- Adult:
  - Yes: 36%
  - No: 62%

Corequisite FF Rate: F16-F17

48%

College Level FF Rate: F16-F17

60%
Next Steps for Research

Expand outcomes analysis:
- Refine retained with good progress metric.
- Explore second course enrollment/completion patterns.
- Prepare 3-year graduation rate analysis for fall 2015.

Perform analysis of spring math cohorts.

Further explore and disaggregate Adult and Accuplacer findings.

Determine feasibility and validity of multivariate placement methodology.
Questions and Discussion

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