Advances in Educating Underprepared College Students: Knowledge, Policy and Practice

Monday, February 26, 2018
3:00 – 4:00 pm
485 Russell Senate Office Building
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Advances in Educating Underprepared College Students: Knowledge, Policy and Practice

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The Influence of IES Research on Fundamental Reform in Developmental Education

Thomas Bailey
Community College Research Center
Teachers College, Columbia University
Students Needing 1+ Developmental Education Course (NCES, 2013)

- Community Colleges: 68%
- Open Access 4-Year Colleges: 40%
Student Progression Through the Developmental Math Sequence

- **11%** Passed Introductory College-Level Math (7,001 Students)
- **13%** Continued to Intro College-Level Math
- **21%** Continued to High-Level Developmental Math
- **37%** Continued to Mid-Level Developmental Math
- **74%** Began Taking Developmental Math
- **89%** Were Lost during the Sequence (56,649 Students)
- **26%** Did Not Enroll after Referral (16,549 Students)

SOURCE: Bailey, Jeong & Cho, 2010
Overview of Findings on Outcomes for Developmental Students

### Developmental Math Students

<table>
<thead>
<tr>
<th>Study</th>
<th>Level</th>
<th>Persistence</th>
<th>Passed College-Level Math</th>
<th>Grade in College-Level Math</th>
<th>Persistence</th>
<th>College-Level Credits Earned</th>
<th>Credential and/or Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tennessee</td>
<td>Upper</td>
<td>Neg</td>
<td>NULL (conditional)</td>
<td>NULL (conditional)</td>
<td>Null</td>
<td>NULL (conditional)</td>
<td>Neg (credential)</td>
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<td>NULL (conditional)</td>
<td>Null</td>
<td>NULL (conditional)</td>
<td>Null</td>
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<tr>
<td>LUCGS</td>
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<td>NULL (conditional)</td>
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<td>NULL (conditional)</td>
<td>Pos (transfer)</td>
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<tr>
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<td>NULL (conditional)</td>
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<tr>
<td>Virginia</td>
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<td>Null</td>
<td>NULL (conditional)</td>
<td>Neg (credential)</td>
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<tr>
<td>Tennessee</td>
<td>Lower vs. Middle</td>
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<td>NULL (conditional)</td>
<td>Null</td>
<td>NULL (conditional)</td>
<td>Null</td>
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</table>

### Developmental Reading Students

<table>
<thead>
<tr>
<th>Study</th>
<th>Level</th>
<th>Persistence</th>
<th>Passed College-Level English</th>
<th>Grade in College-Level English</th>
<th>Persistence</th>
<th>College-Level Credits Earned</th>
<th>Credential and/or Transfer</th>
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<td>NULL (conditional)</td>
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<td>NULL</td>
<td>NULL (conditional)</td>
<td>Null</td>
<td>Null (conditional)</td>
<td>Null</td>
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<tr>
<td>Ohio</td>
<td>Upper</td>
<td>NULL</td>
<td>NULL</td>
<td>NULL (conditional)</td>
<td>Null</td>
<td>NULL (conditional)</td>
<td>Null</td>
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<tr>
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<td>Neg</td>
<td>Neg</td>
<td>Negro</td>
<td>Negro (credential)</td>
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<tr>
<td>Florida</td>
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<td>NEG</td>
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<td>Upper</td>
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<td>Pos (conditional)</td>
<td>Null</td>
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</tbody>
</table>
Under-placement and Over-placement (Severe)

<table>
<thead>
<tr>
<th>Student Ability</th>
<th>Placement According to Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Developmental</td>
</tr>
<tr>
<td>Developmental</td>
<td>✔️</td>
</tr>
<tr>
<td>College Level</td>
<td>Under-placed (English - 29%) (Math - 18%)</td>
</tr>
</tbody>
</table>
Use of Multiple Measures for Assessment Among Public 2-Year Colleges in Reading

SOURCES: 2011 data from Fields and Parsad (2012); 2016 data from the Center for the Analysis of Postsecondary Readiness' institutional survey. NOTE: The Fields and Parsad (2012) reading statistics are for reading placement only, whereas the CAPR survey data are for both reading and writing.
Prevalence of Developmental Math Instructional Methods Among Public 2-Year Colleges

SOURCE: Data from the Center for the Analysis of Postsecondary Readiness' institutional survey.
NOTES: Percentages among 2-year public colleges that reported offering developmental courses. Colleges were counted as using an instructional method if they used it in at least two course sections. Distributions may not sum to 100 percent because categories are not mutually exclusive.
Enrollment in Program and Post-Program Semesters (Persistence)

![Bar Chart]

- **Program Group**
- **Control Group**

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment Rate (%)</td>
<td>Enrollment Rate (%)</td>
<td>Enrollment Rate (%)</td>
</tr>
<tr>
<td>80</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>Program Group</td>
<td>Program Group</td>
<td>Program Group</td>
</tr>
<tr>
<td>Control Group</td>
<td>Control Group</td>
<td>Control Group</td>
</tr>
</tbody>
</table>
What are the Dana Center Mathematics Pathways (DCMP)?

- **Mathematics pathways are structured so that:**
  - All students, regardless of college readiness, enter directly into mathematics pathways aligned to their programs of study.
  - Students complete their first college-level math requirement in their first year of college.

- **Students engage in a high-quality learning experience so that:**
  - Strategies to support students as learners are integrated into courses and are aligned across the institution.
  - Instruction incorporates evidence-based curriculum and pedagogy.
## DCMP Early Impacts on Student Success

<table>
<thead>
<tr>
<th></th>
<th>Program group</th>
<th>Standard group</th>
<th>Difference</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered (%)</td>
<td>87.8</td>
<td>85.9</td>
<td>1.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Registered for developmental math course (%)</td>
<td>77.9</td>
<td>67.8</td>
<td>10.1***</td>
<td>3.7</td>
</tr>
<tr>
<td>Passed developmental math course (%)</td>
<td>47.1</td>
<td>36.6</td>
<td>10.5**</td>
<td>4.1</td>
</tr>
</tbody>
</table>
CUNY Start: College Readiness (Program Semester)

Percent of Students Completed Remedial Requirement

Baseline
- Math: -0.3
- Reading: 0.9
- Writing: -1.3

End of the Program Semester
- Math: 32.6 ***
- Reading: 8.8 ***
- Writing: 11.1 ***

Statistical significance stars: * for the 0.1 level, ** for 0.05, and *** for 0.01
Effect of Multiple Measures on Enrolling in and Passing College Level Math/English

- Math:
  - Control: 13%
  - Treatment: 16%

- English:
  - Control: 27%
  - Treatment: 39%
Contact us
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Visit us online:
Center for the Analysis of Postsecondary Readiness
postsecondaryreadiness.org

To download presentations, reports, and briefs, and sign-up for news announcements. We’re also on Facebook and Twitter.
What have we learned about developmental education from research-practice partnership work?

Friends of IES Congressional Briefing
February 26, 2018
Michelle Hodara, Ph.D.
What do the Regional Educational Laboratories do?

- Conduct rigorous research and data analysis
- Deliver customized training, coaching, and technical support
- Provide engaging learning opportunities
A long-term research-practice partnership supporting changes aimed at improving community college student outcomes in Oregon

Partnership activities:

– Conducted statewide descriptive research to identify the scope of the problem
– Provided college-specific data reports and support with using data to inform local decision-making
– Continue to track policy implementation and results to support continuous improvement
Nearly 75 percent of recent Oregon high school graduates enrolled in community colleges took developmental education courses.
Data and technical assistance helped inform campus-level change and increase connections with high schools

After seeing their own data, Oregon community college stakeholders also wanted to know:

1. What are the developmental education rates and later outcomes for American Indian high school graduates?
2. What are the postsecondary persistence and completion outcomes of students from our feeder school district, regardless of the postsecondary institution they attend?
3. What are the developmental education rates of students from our feeder school districts at other community colleges? Are they higher or lower?
Next steps: Measuring progress toward reform implementation and studying whether the policies improved student outcomes

“There is a joy in their eyes when they learn they need three math courses, not five.”

– Oregon community college faculty member

Traditional sequence

New sequence
Local research in Alaska validated a growing body of evidence on the power of high school GPA to predict college readiness.

- Use research to determine whether an emerging finding holds true in a different context
- Test the findings for rural and urban schools
- Widely disseminate the findings to support informed policymaking
High school GPA was a stronger predictor of college performance than standardized exam scores.
Results were the same in both rural and urban areas
Why is high school GPA such a powerful predictor of college readiness?

Competencies measured by high school grade point average and standardized exam scores

Content knowledge
Cognitive skills
Non-cognitive skills

Measured by high school grade point average
Measured by standardized exam scores

Source: Adapted from Farrington et al. (2012)
How well does high school grade point average predict college performance by student urbanicity and timing of college entry?

**Key findings**

- Developmental education placement rates among first-time students at the University of Alaska were higher in math than in English for students pursuing any type of degree. Developmental math placement rates increased as the time between students’ exiting high school and entering college increased.
- Among bachelor’s degree students, developmental placement rates were highest for Native American students from rural areas of the state in English and Black students from urban areas (in math).
- Among bachelor’s degree students who enrolled in developmental education, 47 percent eventually passed college English and 33 percent eventually passed college math.
- Among students who enrolled directly in college-level courses, high school grade point average was a stronger predictor of performance in college English and math than were SAT, ACT, or ACCUPLACER scores.

**Why this study?**

Across the country, large numbers of incoming college students are considered academically unprepared and are recommended for developmental courses. A 2010 study of 24 community colleges in seven states found that 17 percent of students were placed in developmental English, and 13 percent were placed in developmental math. Another study found that from fall 2010 to spring 2012, about three fourths of students who entered college with developmental education were unemployed, and about half were enrolled in remedial classes.

What predicts participation in developmental education among recent high school graduates at community college? Lessons from Oregon

**Key findings**

- Nearly 75 percent of recent high school graduates who enrolled in an Oregon community college took at least one developmental education (that is, non-credit-bearing prerequisite) course.
- Among high school graduates who started at a lower level of developmental education at community college were less likely than their peers who started at a higher level to stay in college and earn a degree.
- For recent high school graduates, individual academic achievement in high school influences participation in developmental education at community college more than sociodemographic characteristics and school-level factors.
- Students who took dual-credit courses in high school in certain subject areas were less likely to participate in developmental education at community college.
Scott Ralls
President, Northern Virginia Community College
Questions