Research on Alternative Placement Systems

Using Predictive Analytics to Place Incoming College Students

Community College Research Center
MDRC
SUNY

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Students needing 1+ developmental education course (NCES, 2013)
Community college 8-year graduation rates (Attewell, Lavin, Domina, and Levey, 2006)

28%  
43%
Developmental education student outcomes (Results from 8 studies)
## Under-placement and Over-placement

<table>
<thead>
<tr>
<th>Student Ability</th>
<th>Placement According to Exam</th>
<th>Developmental</th>
<th>College Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developmental</td>
<td></td>
<td>✔️</td>
<td>Over-placed</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(English – 5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Math – 6%)</td>
</tr>
<tr>
<td>College Level</td>
<td>Under-placed</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td></td>
<td>(English – 29%)</td>
<td></td>
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<tr>
<td></td>
<td>(Math – 18%)</td>
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</tbody>
</table>
One solution: Multiple measures used when placing students

- Hierarchy of measures (North Carolina, some NY colleges)
- Review panel looking at a range of measures (Wisconsin)
- Use of an algorithm (Long Beach, CA)
Data Analytics

- Placement exams often place incorrectly
- **Can we do better?**
- Use better data + Predictive Analytics
- More accurate placement
  - Reduces students who fail college-level classes
  - Increases share of students who receive B or better
- Improved longer term outcomes?
How Does the Algorithm Work?

- Use data from *previous* cohorts
- Develop formula to predict student performance
- Use formula to place *entering* cohort of students
Research Questions (working)

1. Do student outcomes improve when they are placed using predictive analytics?

2. How does each college adopt/adapt and implement such a system?
Map of Participating Colleges
Phases of the Research

• Recruit/finalize sites.
• Develop algorithm with each college
• Randomly assign students to placement with algorithm or “business as usual”
• Pilot test the research process
• Conduct impact research on 4 cohorts of students (spring16-fall17)
• Conduct implementation research, including cost analyses
• Analyze outcomes.
Outcomes of interest

- Completion of first college-level courses in related area.
- Accumulation of college credits.
- Other outcomes under consideration...
Components of the RA Process

Consent → Test → Data Transfer

RA

Algorithm

Status Quo

Placement
Emerging Issues

1. Assessment, placement and developmental education practices are changing rapidly.

2. Data are not always available for key variables that may predict success in college (e.g. “non-cognitive” measures).

3. High school data are seldom in college data systems.

4. There is a tension between setting up a placement system optimal for research and one that can be sustained over time.
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