The Potential of Transcript-Based Placement

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Session Outcomes

1. Describe findings from an analysis of how predictive transcript data are of student success in college courses

2. Explain how one college has changed its practices as a result of the study

3. Discuss how research results can be used to inform college policies and offerings
HOW THINGS GOT STARTED

Looking closer at assessment and placement
Long Beach College Promise: The Origins of Promise Pathways

**Seamless Education:** Partnership between LBUSD, LBCC and CSULB founded in 1994

**Long Beach College Promise:** began March 2008

- **LBUSD:** Preparing students for college
- **LBCC:** Promise Scholarship
- **CSULB:** Local high school graduates receive preferential admission

Despite years of partnership – college readiness rates did not improve. Is there a way to improve our understanding of college readiness?
Current Assessment and Placement Model

- CCCs are open enrollment institutions
  - requires method for assessing and planning for the preparation and educational needs of incoming students.
- Most rely on standardized assessment instrument
- Most students placed into developmental courses
- Clear evidence that remedial placement is a significant barrier to completion
- Colleges’ first interaction with most students is to tell them they’re not ready for college
- Convinces many people – including students – that students are likely to fail
Conventional Wisdom to Explain Assessment Results

It is a problem with our students
- Students are simply, vastly unprepared for college
- Kids these days ….

It is a problem with public education
- Public education is failing to prepare high school students
- Teachers these days…
What If the Conventional Wisdom is Wrong?

What if the problem is not with our students, but with how we have used placement tests?

- Proportion of HS graduates is ~90% among ages 18-24, an all-time high
- Gold standard of assessment, the NAEP: scores of Hispanic, African-American, Asian-American and White students are at highest points in history
- Growing body of research that questions effectiveness of assessment and placement that relies on standardized tests
  - What’s more: standardized assessments appear to have surprisingly little relation to college course outcomes. (e.g., Belfield & Crosta, 2012; Edgescome, 2011; Scott-Clayton, 2012; Scott-Clayton & Rodriguez, 2012; Xu, forthcoming)
A Question for You

What percentage of local high school graduates are prepared for college-level English at LBCC?

• 14% using standardized assessments
• 56% using a predictive placement model implemented in Fall 2012
• How did we get here?
Our Research

Sought local answers to 3 questions:

• What predicts how students assess and place into developmental courses?

• What predicts how students perform in those courses?

• How well are placement and performance aligned?
Our Research

• Five longitudinal cohorts tracking more than 7,000 HS graduates who attended LBCC directly after high school

• Simplified presentation of utility of 11th grade California Standards Test (CST) scores and high school grades for predicting:
  ▪ Unstandardized ordinal and logistic regression
  ▪ How students are assessed and placed into the levels of our developmental skills sequences
  ▪ How students perform in those classes
this doesn't seem like a bullet item because it doesn't match the other two

DMC, 10/31/2012
Alignment in English

Predicting Placement

Predicting Performance

* p < .05 **, p < .01, *** p < .001, x = p < 1 x 10^{-10}
Alignment in Math

Predicting Placement

Predicting Performance

* p <.05 **, p <.01, *** p<.001, x = p< 1 x 10^{-10}
The Key Takeaways

• Standardized tests best predict standardized tests
• Classroom performance best predicts classroom performance
• More information tells you more about a student than less information
A BRIEF OVERVIEW

The Student Transcript-Enhanced Placement Project (STEPS)
What Are We Trying to Do?

- Examine the value of using transcripts as part of the assessment process
- Create predictive models using Cal-PASS data to study students who had already taken community college courses
- Use models to analyze how well transcript data predicts the first English & math courses students take and how well they do in them
- Recruit colleges to do local analyses to generate campus-specific insights and trigger CCC/K-12 conversations
Related Work

• Willett, Hayward, & Dahlstrom. (2007). Leveraging the CSTs.
• English Curriculum Alignment Project (ECAP) between Grossmont College and Grossmont UHSD.
### Table 3. Spearman Rho correlation coefficients between 11th grade English CST and level of and grade in first attempted community college English course

<table>
<thead>
<tr>
<th>11th Grade English Outcome Measure</th>
<th>College Course Level</th>
<th>College Course Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>Number of Students</td>
</tr>
<tr>
<td>English CST Scores</td>
<td>0.49**</td>
<td>4700</td>
</tr>
<tr>
<td>English Grade</td>
<td>0.23**</td>
<td>4700</td>
</tr>
</tbody>
</table>

**p ≤ .01  *p ≤ .05**  Note: Darker cell shadings indicate stronger correlations.

CART Predicting First Community College Math Grade Point
1. 11th Grade Math Grade <= 2.41 [ Ave: 1.932, Effect: -0.229 ] (744)
      1.1.1. 11th Grade Math Grade <= 1.82 [ Ave: 1.427, Effect: -0.228 ] => 1.427 (211)
      1.1.2. 11th Grade Math Grade > 1.82 [ Ave: 1.98, Effect: 0.325 ] (148)
         1.1.2.1. Community College Pseudo Code in [ 12 21 26 39 41 ] [ Ave: 1.5, Effect: -0.48 ] => 1.5 (54)
         1.1.2.2. Community College Pseudo Code in [ 11 14 16 51 60 ] [ Ave: 2.255, Effect: 0.276 ] => 2.255 (94)
1.2. Community College Pseudo Code in [ 4 5 6 10 13 20 25 29 30 44 50 57 61 ] [ Ave: 2.19, Effect: 0.259 ] (385)
   1.2.1. Community College Pseudo Code in [ 4 5 6 20 29 44 50 57 ] [ Ave: 2.106, Effect: -0.085 ] (334)
      1.2.1.1. 12th Grade Math Grade <= 2.53 [ Ave: 2.027, Effect: -0.079 ] (272)
         1.2.1.1.1. 11th Grade Math CST Scaled Score <= 288.500 [ Ave: 1.894, Effect: -0.132 ]
                  => 1.894 (177)
         1.2.1.1.2. 11th Grade Math CST Scaled Score > 288.500 [ Ave: 2.274, Effect: 0.247 ]
                  => 2.274 (95)
      1.2.1.2. 12th Grade Math Grade > 2.53 [ Ave: 2.452, Effect: 0.346 ] => 2.452 (62)
   1.2.2. Community College Pseudo Code in [ 10 13 25 30 61 ] [ Ave: 2.745, Effect: 0.555 ] => 2.745 (51)
2. 11th Grade Math Grade > 2.41 [ Ave: 2.472, Effect: 0.311 ] (547)
   2.1. 11th Grade Math Grade <= 3.32 [ Ave: 2.308, Effect: -0.163 ] (372)
           => 2.045 (156)
      2.1.2. Community College Pseudo Code in [ 4 5 6 13 20 29 41 51 57 61 ] [ Ave: 2.499, Effect: 0.19 ] =>
           2.499 (216)
   2.2. 11th Grade Math Grade > 3.32 [ Ave: 2.819, Effect: 0.347 ] (175)
      2.2.1. 12th Grade Math Grade <= 2.95 [ Ave: 2.505, Effect: -0.314 ] => 2.505 (58)
      2.2.2. 12th Grade Math Grade > 2.95 [ Ave: 2.974, Effect: 0.156 ] => 2.974 (117)

r=0.37

Source: Willett, Terrence; Hayward, Craig; Dahlstrom, Eden. (2008).
Table 5. Example Math “Cut Score” Guide for High School Advising and Community College Placement

<table>
<thead>
<tr>
<th>11th Grade CST Score (Proficiency Level)</th>
<th>11th Grade Course Grade</th>
<th>11th Grade High School Course Taken</th>
<th>Probability of Success</th>
<th>Summative Math</th>
<th>Probability of Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>375 (Proficient)</td>
<td>A</td>
<td>Pre-Calculus</td>
<td>&gt;90%</td>
<td>Pre-Calculus</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>375</td>
<td>B</td>
<td>Pre-Calculus</td>
<td>&gt;90%</td>
<td>Pre-Calculus</td>
<td>85%</td>
</tr>
<tr>
<td>375</td>
<td>C</td>
<td>Transferable General Education</td>
<td>79%</td>
<td>Pre-Calculus</td>
<td>73%</td>
</tr>
<tr>
<td>375</td>
<td>D</td>
<td>Transferable General Education</td>
<td>67%</td>
<td>Transferable General Education</td>
<td>53%</td>
</tr>
<tr>
<td>375</td>
<td>F</td>
<td>Intermediate Algebra</td>
<td>58%</td>
<td>Transferable General Education</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>275 (Below Basic)</td>
<td>A</td>
<td>Intermediate Algebra</td>
<td>88%</td>
<td>Transferable General Education</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>275</td>
<td>B</td>
<td>Intermediate Algebra</td>
<td>78%</td>
<td>Transferable General Education</td>
<td>78%</td>
</tr>
</tbody>
</table>

Source: Willett, Terrence; Hayward, Craig; Dahlstrom, Eden. (2008).
What Is Happening Now?

• Missing data weakened the predictive models (this highlights the value of strengthening data sharing among segments)
• Most colleges are still working on their analyses
• Updated file management module and analysis scripts being released
• Bottom line: So far, high school performance is partially predictive of college performance
In English, tests predict tests, grades and courses matter but vary by college.
Cox & Snell pseudo R-square ~ 0.35

Predicting College English Level

Count of Colleges Showing Significance

Predictor Variable Category

- CST's
- A-G Courses
- HS Course Level
- HS Course Grade
- HS GPA*

Predictor

- Strongest
- Intermediate
- Weakest
STEPs: Predicted Probability of Initial Level of College English Over Grade 11 CST ELA Standardized Scale Score

Grade 11 CST ELA Scale Score (Standardized)
In math, the specific classes taken in high school predict placement most strongly.
Cox & Snell pseudo R-square ~ 0.50

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STEPS: Predicted Probability of Initial Level of College Math Over Grade 11 CST Math Scale Score

College
- College A
- College B
- College C
- College D
- College E
- College F

sig.t
- p <= .05
In English, grades predict grades.
Predicting College English Success

Count of Colleges Showing Significance

CST's Courses  A-G Course Level  HS Course Grade  HS GPA*  College Course Level

Predictor Variable Category

Strongest  Intermediate  Weakest

Cox & Snell pseudo R-square ~ 0.20
STEPS: Predicted Probability of Success in First College English
Over High School GPA w/o English

sig.t
- p <= .05
- p > .05

College
- College A
- College B
- College C
- College D
- College E
- College F

Probability of Success (C or better)
High School GPA w/o English
In math, success predictors vary by college.
Cox & Snell pseudo R-square ~ 0.20

The Potential of Transcript-Based Placement: CAIR, November 2012
STEPS: Predicted Probability of Success in First College Math Over High School GPA w/o Math

sig.t
- p <= .05
- p > .05

College
- Red: College A
- Yellow: College B
- Green: College C
- Cyan: College D
- Blue: College E
- Magenta: College F
What’s Going on Here?

CST tests for English and math are different

- English is less complex to examine as there is generally only one 11\textsuperscript{th} grade CST test form and most students are taking the same types of classes

- In math, CST tests are based on the specific course you took (e.g., Algebra II, Pre-Calc) and so analyses are more complex
Math: It’s a question of articulation

- It’s more straightforward to articulate math than English because there is a clear sequence of courses—the question is whether we are examining the math level that students reached—**that’s why high school math level is most important**
What’s Going on Here?

English: It’s a different question of articulation

- For English, there is a disconnect between the literary emphasis in high school and the expository emphasis in college—non-English high school GPA is more predictive than grades in high school English of college success, which implies that other skills are supporting positive outcomes.
What Happens Next?

• Due to challenges with missing data, additional techniques will be applied

• New research questions have emerged about using transcripts for assessment

  • For how long are transcripts valid?
  • What is the relative predictive value of other measures such as EAP level, placement tests, or SAT/ACT scores?
  • What is the influence of race/ethnicity or other student level factors?
Discussion

• For those of you that have reviewed transcript data, have you used this information in your placement process?
• How did you get this information?
• What could colleges do to increase their access to transcript information?
• What factors seem most important for successfully using transcripts?
• How important would it be at your institution to link shifts in course offerings with changes in assessment processes?
WHAT COULD YOU DO WITH THIS TYPE OF INFORMATION?

How Research Can be Used to Inform College Policies and Offerings
Evidence-Based Change: Fall 2012, Promise Pathways

966 students received:

- Pilot predictive placement model in English & Math using multi-method, evidence-based assessment
  - English: A or B in 12th Grade English (60%)
  - Math: Predicted rate of success using all meaningful variables >= average success rate in course
- Prescriptive, full-time course load
  - Emphasis on early completion of foundational skills

Taken together, what does this mean for our students?
English: Full Implementation of Placement and Prescriptive Enrollment Alternative vs. Traditional Placement

<table>
<thead>
<tr>
<th></th>
<th>English 1 (or higher)</th>
<th>One level below</th>
<th>Three levels below</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>14%</td>
<td>38%</td>
<td>47%</td>
</tr>
<tr>
<td>Pathways</td>
<td>56%</td>
<td>17%</td>
<td>27%</td>
</tr>
</tbody>
</table>

The Potential of Transcript-Based Placement: CAIR, November 2012
Math: Partial Implementation: Placement (but only partial prescriptive enrollment)

<table>
<thead>
<tr>
<th>Placement Level</th>
<th>Traditional</th>
<th>Pathways</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer Level</td>
<td>9%</td>
<td>31%</td>
</tr>
<tr>
<td>Intermediate Algebra (1)</td>
<td>27%</td>
<td>30%</td>
</tr>
<tr>
<td>Algebra (2)</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td>Pre-Algebra (3)</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>Arithmetic (4)</td>
<td>2%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Traditional: 9% 27% 42% 20% 2%
Pathways: 31% 30% 23% 16% 1%
Placement is Not Enough: Full-Time Students

![Bar chart showing total and full-time students compared to typical LUSD and 2012-2013 data.](image)

- Total: 1650 (Typical LUSD), 1514 (2012-2013)
- Full-time: 966 (Typical LUSD), 400 (2012-2013)
Key Additional Pilots

- Contextualized Reading Pilot
- Success Course Delivery
- Achievement Coaches
What LBCC Gained By Using Multiple Measures

• Provided students earlier but appropriate access to transfer-level courses

• Increased dramatically the potential number of students likely to attain meaningful educational outcomes while decreasing the time to do so

• Opened new avenues of discussion about research and kick-starts opportunities for experimentation and innovation

• Challenged conventional wisdom about students’ readiness for college

• Provided concrete steps that any college—like yours—could take to dramatically improve all students’ futures
What Can You Do?

Replicate this research at your campus

Learn more about research on placement exams

Find out more about Long Beach’s efforts
• http://www.rpgroup.org/resources/promising-pathways

Find out more about the previous Cal-PASS study
• http://www.rpgroup.org/content/2009-rp-statewide-research-award-winner-using-california-standards-test-identify-remediation
Discussion

• What questions do you have about Long Beach City College’s research and placement changes?
• What venues do you have at your college for discussing measures that should be included in assessment?
• What would be important to address if you shared the results of the statewide analysis or your own transcript study with your colleagues?
Find Out More

• The STEPS report will be released
• The PowerPoint on this presentation available later this month at www.rpgroup.org

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