Let Icarus Fly:
Unleashing student achievement
through multiple measures
assessment

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Overview

• Standardized tests systematically underestimate student capacity
  • Students of color
  • First generation college students
  • Lower SES
  • Women
• Multiple measures (esp. GPA) fairer and far more accurate predictor of college performance/graduation
  • Increase grad rates, decrease time to completion
• Very low cost, exceptionally high ROI
  • To students
  • To colleges
  • To state
Daedalus and Icarus

• Daedalus crafted the labyrinth of inescapable complexity for King Minos

• To escape from Minos, Daedalus built wings of feather and wax for his son Icarus and himself

• Don’t fly too high, lest sun melt the wax and you plummet to your doom
  • Dangers of innovation/invention, hubris,
  • Importance of knowing your limits, listening to your wiser elders

• But most of us forget the rest of that story...
Transition to College: Assessment and Placement

- CCCs are open enrollment institutions
  - Requires assessing and planning for educational needs of students.

- Goal: Effectively place student at most appropriate level for their skill
What are we aiming for?
The Zone of Proximal Development

Level of challenge/difficulty of task

Degree of competence/level of skill

Where challenge matches skill

MR. WORRY
Mr. Roger Hargreaves

ANXIETY

I HAS BOREDOM.
What are we aiming for?
The Zone of Proximal Development

- What the learner cannot currently achieve
- What the learner can achieve/learn with instructional support

Level of challenge/difficulty of task

Degree of competence/level of skill

What the learner can currently achieve independently
What are we aiming for?
The Zone of Proximal Development

- What the learner cannot currently achieve
- What the learner can achieve/learn with instructional support

Level of challenge/difficulty of task

Degree of competence/level of skill

Engagement

Improvement

Success

Flow
A key tension

- Effective assessment vs. efficient assessment
  - Holistic, intensive, individual
  - Standardized assessment

  
Student transition to college

• Community colleges rely nearly entirely on standardized assessment

• Most CC students placed below college-level
  • Significant barrier (Bailey, Jeong, and Cho, 2010)

• First interaction is to tell students they don’t belong, they’re not ready

• Imply that most students are not ready for college and are likely to fail
  • Convinces many, including our students
Conventional Wisdom
Explaining Assessment Results

• It is a problem with today’s students
  • Students are simply, vastly unprepared for college
  • Kids these days ….

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

• Substantial, long-term increase in IQ: bit.ly/FlynnEffectIQ
• 18-24 with HS degree: 90% - highest ever: bit.ly/HS18-24
• National Assessment of Educational Progress: at all-time highs in virtually every demographic category: bit.ly/NAEPIInfo
What If the Conventional Wisdom is Wrong?

• Research increasingly questions effectiveness of standardized assessment for placement
  • CCRC: [bit.ly/CCRCAssess](bit.ly/CCRCAssess)
    • Little relation to college course outcomes
    • Severe underplacement
      • (e.g., Belfield & Crosta, 2012; Edgescombe, 2011; Scott-Clayton, 2012; Scott-Clayton & Rodriguez, 2012)
    • Incredible variability in cutscores
    • 2-year colleges often use HIGHER cutscores than 4-year
    • Standardized assessment underestimates capability of students of color, women, first gen college students, low SES
    • Admission and financial aid
What if?

• What if the problem is not with our students but with limitations in how we have assessed their capacity to do college-level work?

• OR

• What if one of the barriers to our students’ successful transition to college is one that we fully control?
LBCC/CalPASS Research

• Cal-PASS Plus is a custom built enormous data set with tens of thousands of students
• Five longitudinal cohorts tracking more than 7,500 HS grads who attend LBCC directly after high school

• Examined predictive utility of wide range of high school achievement data
  • most notably 11th grade California Standards Test (CST) scores and high school grades

• For predicting:
  • How students are assessed and placed into developmental skills sequences
  • How students perform in those classes
  • (and for understanding alignment between them)
Alignment in English

Predicting Placement

Predicting Performance

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

Predicting Placement

CST Math (z) | Last Math Grade | HSGPA
--- | --- | ---
0.75* | 0.20 | 0.00

Predicting Performance

CST Math (z) | Last Math Grade | HSGPA
--- | --- | ---
0.20* | 0.25** | 0.73*

* p < .05 **, p < .01, *** p < .001, x = p < 1 x 10^-10
Key Takeaways (Warning: they may shock you)

Sample focus group responses:
Key Takeaways

• Assessment should predict how students will perform at our colleges

• Instead:
  • Standardized tests best predict standardized tests
  • Classroom performance best predicts classroom performance
  • More information tells us more about students than less information

• Significant potential exists to improve placement, student achievement, and students’ college experience.
Why high school GPA?

• It’s a methodological dream come true

• Measurement: True score + error
  • Systematic error:
    • method, domain/content, instructor, pedagogy, curriculum
  • Random error
    • you had a bad day
      • (you’re taking one down, you sing a sad song just to turn it around),
    • bad semester

• GPA measures across:
  • Time
  • Instructor
  • Domain
  • Assessment methods
Reimagining the Transition to College: Fall 2012 Promise Pathways

• ~1000 students received placement in English & Math using multi-method, evidence-based assessment

  • **English**: A or B in 12th Grade English (proxy)
  
  • **Math**: Predicted rate of success using all variables $\geq$ average success rate in course

• Prescriptive, full-time course load via first-semester success plan
Multiple Measures Placement:
Transfer-level Placement Rates F2012

Transfer Level English
- F2011 First time students: 11%
- F2011 LBUSD: 13%
- F2012 Promise Pathways - Accuplacer Only: 14%

Transfer Level Math
- F2011 First time students: 7%
- F2011 LBUSD: 9%
- F2012 Promise Pathways - Multiple Measures: 9%

Overall Transfer Level Placement Rate:
- F2012 Promise Pathways - Multiple Measures: 31%
F2012 Promise Pathways vs. Fall 2011 2-year rates of achievement

- Successfully Completed Transfer Math: 13% (F2011 LBUSD), 23% (F2012 Promise Pathways)
- Successfully Completed Transfer English: 24% (F2012 Promise Pathways), 20% (F2011 LBUSD)
- Successful Completion of English 3: 3% (F2011 LBUSD), 52% (F2012 Promise Pathways)
- Behavioral Intent to Transfer: 31% (F2012 Promise Pathways), 54% (F2011 LBUSD)
Equity impact: F2011 Baseline Equity Gaps for 2-year rates of achievement

<table>
<thead>
<tr>
<th>Category</th>
<th>F11 African Americans</th>
<th>F11 Hispanic</th>
<th>F11 Asian</th>
<th>F11 White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer Math Successful Completion</td>
<td>4%</td>
<td>21%</td>
<td>18%</td>
<td>12%</td>
</tr>
<tr>
<td>Transfer English Successful Completion</td>
<td>13%</td>
<td>25%</td>
<td>24%</td>
<td>20%</td>
</tr>
<tr>
<td>English 3 Successful Completion</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td>Behavioral Intent to Transfer</td>
<td>15%</td>
<td>32%</td>
<td>33%</td>
<td>41%</td>
</tr>
</tbody>
</table>
Equity impact: F2011 Baseline Equity Gaps for 2-year rates of achievement

- Transfer Math Successful Completion: 12% (F12 African American), 36% (F12 Hispanic), 39% (F12 Asian), 42% (F12 White)
- Transfer English Successful Completion: 21% (F12 African American), 51% (F12 Hispanic), 39% (F12 Asian), 58% (F12 White)
- English 3 Success: 18% (F12 African American), 17% (F12 Hispanic), 17% (F12 Asian), 23% (F12 White)
- Behavioral Intent to Transfer: 12% (F12 African American), 28% (F12 Hispanic), 23% (F12 Asian), 59% (F12 White)
Success rates in transfer-level courses
Fall 2012

Neither of these differences approach significance, p > .30
Success rates in transfer-level courses
Fall 2014

Transfer Level English
- Non-Pathways: 67%
- Promise Pathways: 79%
English difference, $p < .001$

Transfer Level Math
- Non-Pathways: 49%
- Promise Pathways: 49%
How might this change how we understand college readiness?

College Readiness – Spring 2012 Graduates

- English: 38% (Applying LBCC Placement Model to All LBUSD Graduates)
- Math: 33% (Standardized assessment (EAP))

18% 6%
Not just Long Beach

• STEPS – replicates the research at more than 12 other CCCs that make it to the end (including PCCD)

• CCRC work led to multiple measures being used throughout the system – HS GPA > 2.7 and intermediate algebra – go directly to college level.

• Bakersfield College: Transfer Making it Happen (TMIH)
  • 454 Cal-SOAP students – 307 (68%) were placed higher in one or more disciplines

• Rio Hondo: Placement for Success Pilot (California Colleges Guidance Initiative)
  • 336 students – 1 in transfer math, 33 in Algebra 2 (10%) to 124 transfer-level Math (37%) and 77 in Algebra 2 (23%)

• Sierra College: English MM pilot success rates
  • Multiple measures: 79%, Accuplacer, 73%
But wait there’s more…

• Butte College – accidental lowering of cutscore during change to Accuplacer, 60% increase in completion of transfer-level English in first year, 2-3X for African American and Hispanic students:

• bit.ly/LetThemIn

• Grossmont Cuyamaca – ECAP. Before 95% of A & B students remedial, After = 100% transfer level, 86% success rate

• bit.ly/Grossmont
What is gained through evidence based approach to transition to college

• **Dramatic increases** in students attaining early educational milestones, & **shorter times to do so**

• New discussion of research and instructional pedagogy, jump-starting **experimentation** and **innovation**

• **Forging** stronger intersegmental relationships around alignment, curriculum, preparation/readiness, and comprehensive student support

• **Saved** thousands of units of unnecessary remediation and far greater opportunity costs

• Concrete achievable steps that **any** college can take to dramatically improve **all** of our students’ futures.

• A reminder of Daedalus’ second instruction:
  • it’s also dangerous to fly too low.
Contact Information

• Research questions/CalPAS Plus data requests
  • John Hetts, Educational Results Partnership
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  • 714-380-2678 cell
  • Twitter: @jhetts

• General questions about Promise Pathways or Long Beach College Promise
  • Alicia Kruizenga, Director of School Relations and International Education:
  akruizenga@lbcc.edu
  • (562) 938-4083
  • http://www.lbcc.edu/PromisePathways
Additional Resources

- Background research
  - Achieving the Dream/Jobs for the Future summary of alternative assessment
    - [bit.ly/AlternativeAssessment](bit.ly/AlternativeAssessment)
  - CCRC research on Assessment, Placement, and Progression in Developmental Education
- More information about initial research
  - [http://www.lbcc.edu/PromisePathways/](http://www.lbcc.edu/PromisePathways/)
- RP Group’s Student Transcript-Enhanced Placement (STEPS) Project
- Multiple Measures Assessment Project and CAI