Resources for for Reimagining Student Capacity and Rethinking Placement

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http://bit.ly/AACCPathways

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#LetIcarusFly

Meta-rules

- Accurate assessment absolutely relies on using >1 measure
- Three rules of assessment
  - Standardized tests predict subsequent standardized tests
  - Classroom performance predicts later classroom performance
  - More information about students is better than less*
- Good students should never go backwards and rarely repeat
  - All we are saying is give (students with) B's a chance.
- Perfect is the enemy of the (much) better
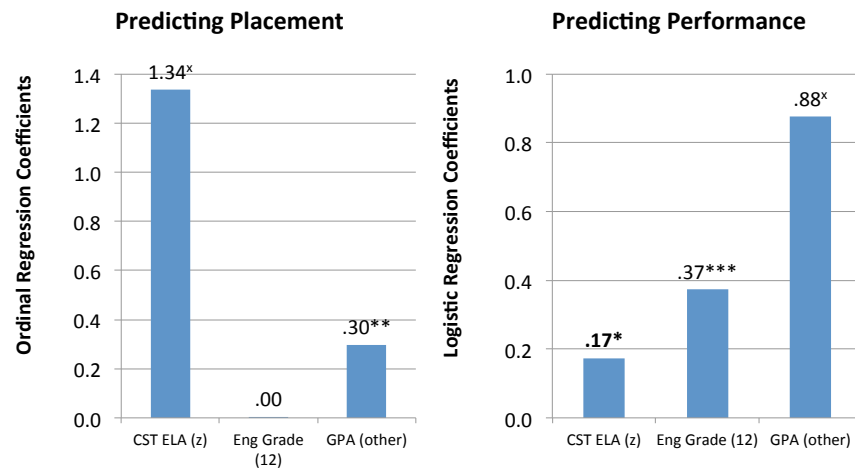- Daedalus' advice to Icarus is true for assessment

Why are multiple measures important in assessment?

- Basic assessment/measurement theory:
    - When you measure something you get:
        - ○ True score (thing you care about) AND
        - ○ Error
            - • Systematic error (regular error or bias in measurement)
            - • Random error (temporary or contextual errors)
- Methodological gold standard of assessment
    - To avoid systematic and random error, triangulate to true score through assessment across different:
        - ○ methods of assessment (how)
        - ○ context of assessment (who/where)
        - ○ content domains (what)
        - ○ time (when)
- *Important not to confuse precision (repeatability) with accuracy (relation to true score)*

Guide to Improving Assessment

- REL Southwest report: step by step primer to developing better college readiness indicators/placement:

    http://bit.ly/RELSWReadiness

    - attention to underplacement (the seductively invisible error)

    - importance of multiple measures and HSGPA

    - various methods for development

        - ○ Reverse engineering logistic regression (via logit link function) to generate probability of success for every course level within a discipline

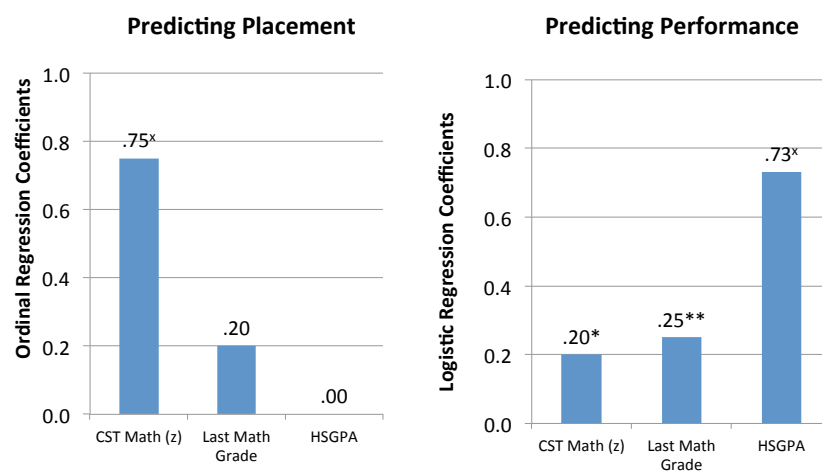   - ○ Categorical and regression tree models

## Predicting placement & performance in English at LBCC

Predicting Placement

Ordinal Regression Coefficients

- 1.34[x] — CST ELA (z)
- .00 — Eng Grade (12)
- .30** — GPA (other)

Predicting Performance

Logistic Regression Coefficients

- .17* — CST ELA (z)
- .37*** — Eng Grade (12)
- .88[x] — GPA (other)

http://www.lbcc.edu/PromisePathways

* $p < .05$ **, $p < .01$, *** $p < .001$, x = $p < 1 \times 10^{-10}$

Predicting placement and performance in Math at LBCC

Predicting Placement

Ordinal Regression Coefficients

- .75[x] — CST Math (z)
- .20 — Last Math Grade
- .00 — HSGPA

Predicting Performance

Logistic Regression Coefficients

- .20* — CST Math (z)
- .25** — Last Math Grade
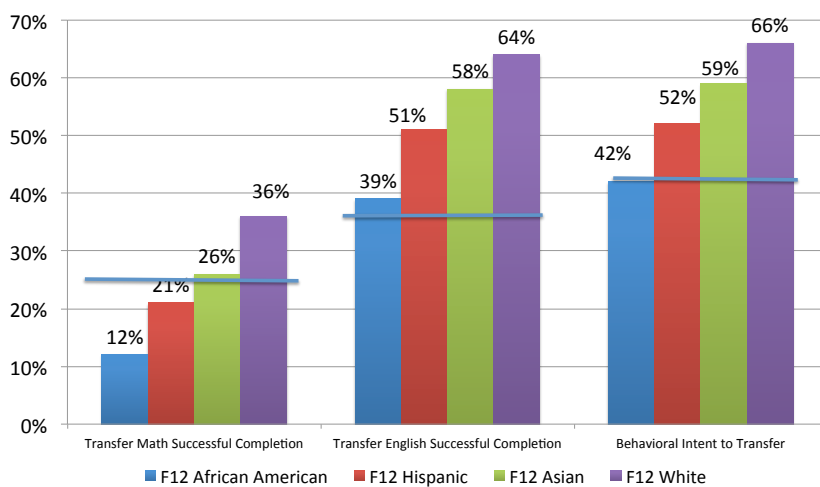- .73[x] — HSGPA

* $p < .05$ **, $p < .01$, *** $p < .001$, x = $p < 1 \times 10^{-10}$

Potential equity & completion impact: LBCC F2011 vs F2012 Equity Gaps for 2-year rates of achievement
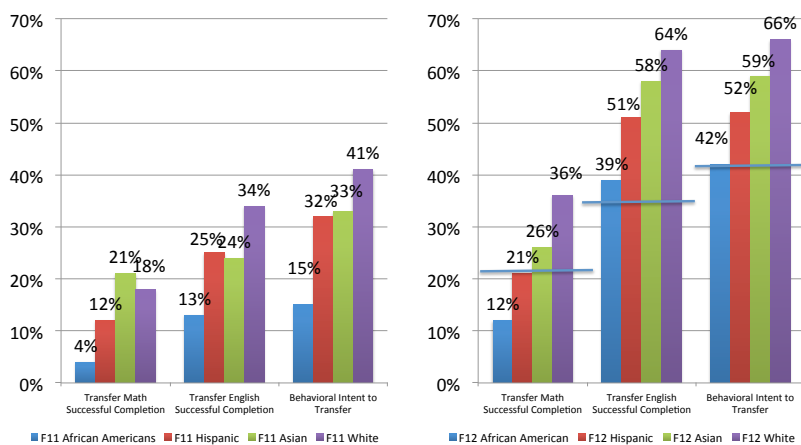
LBCC: F2012 2-year rates of achievement

Multiple Measures Assessment Project
Examples of transfer-level decision rules

English	Math (College Alg.)
11th Grade High School GPA ≥ 2.6	11th Grade High School GPA ≥ 3.2
	& Algebra II C or better
	OR
	11th Grade High School GPA ≥ 2.9
	& Pre-calculus C or better
http://bit.ly/MMAPRules	http://bit.ly/MMAP2015

Common Concerns/Multiple Measures Myths

1. Students placed via multiple measures will not be successful
2. Our test is different/better/more awesome
    • It won't work at my school/type of institution
3. Students would be better off going through developmental education
4. High school GPA is only predictive for recent graduates
5. It's too hard to get or use transcripts/it's not worth it
6. Will threaten my college's enrollment/ FTES

1. Students placed by multiple measures do just as well, often better despite many more being placed at college-level
2. Virtually every place I've been has said this and no one to date has been right.
3. For moderately to better prepared students, no evidence that's true
4. HS GPA appears as or more predictive as tests to about 10 years
5. Self-report may be viable alternative/ paying to evaluate transcripts best money you ever spent
6. Students profoundly grateful, more likely to enroll

Our test wasn't different - Compass

Course	Compass Test	Compass	HSGPA	HSGPA + Compass
English 1	Writing Skills	.31	.57	.62
Arithmetic	Pre-Algebra	.57	.34	.66
Algebra	Pre-Algebra	.36	.65	.80
Intermediate Algebra	Algebra	.47	.66	.84
College Algebra	Algebra	.41	.76	.88
College Algebra	College Algebra	.51	.76	.94

http://bit.ly/COMPASSValidation (Table 4 - Median Logistic R)

Our tests weren't different - NC
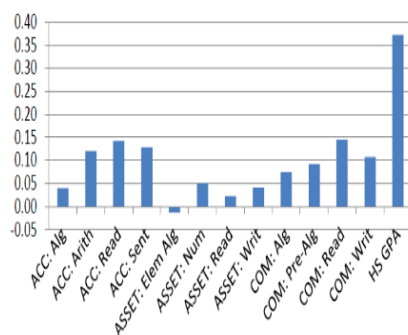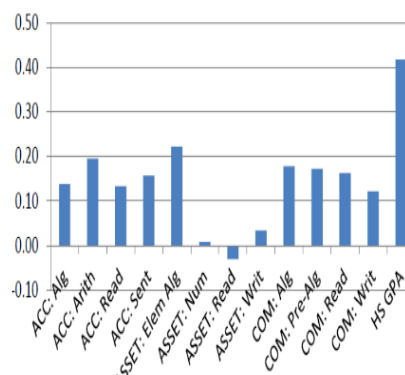
From Bostian (2016), North Carolina Waves GPA Wand, Students Magically College Ready adapted from research of Belfield & Crosta, 2012 – see also Table 1)

Our tests weren't different - AK

Figure 6. Among University of Alaska students who enrolled directly in college English courses, high school grade point average explained more of the variation in college English grades than did exam scores, 2008/09–2011/12
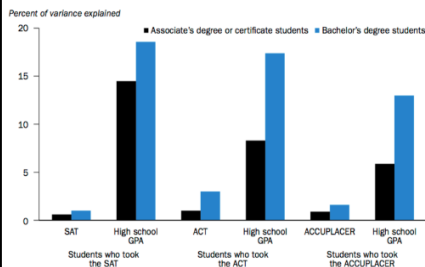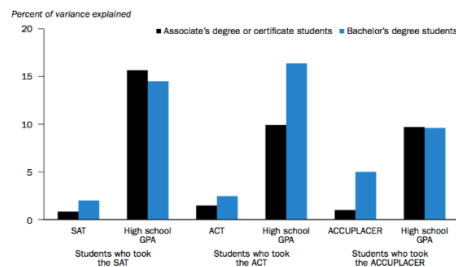
Figure 7. Among University of Alaska students who enrolled directly in college math courses, high school grade point average explained more of the variation in college math grades than did exam scores, 2008/09–2011/12
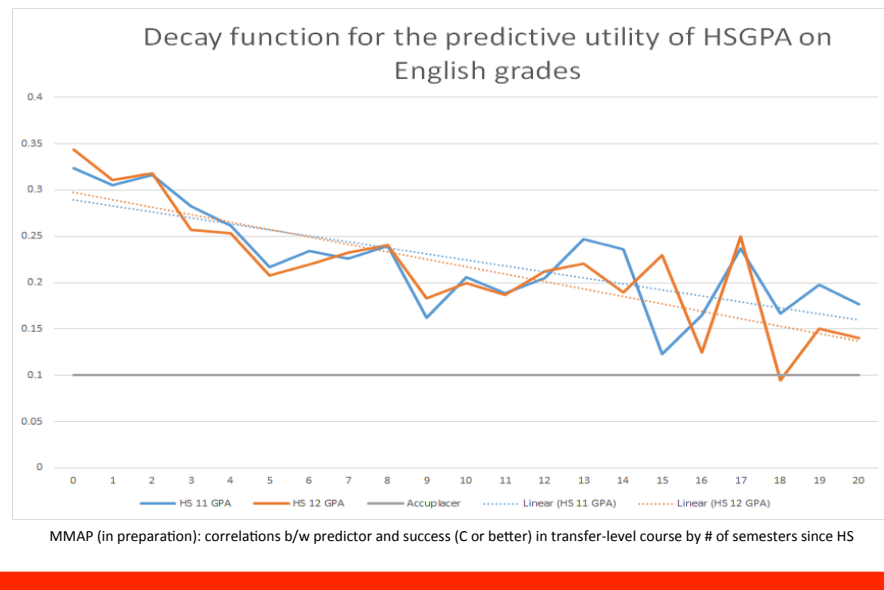
From Hodara, M., & Cox, M. (2016), **Developmental education and college readiness at the University of Alaska**: http://bit.ly/HSGPAAK
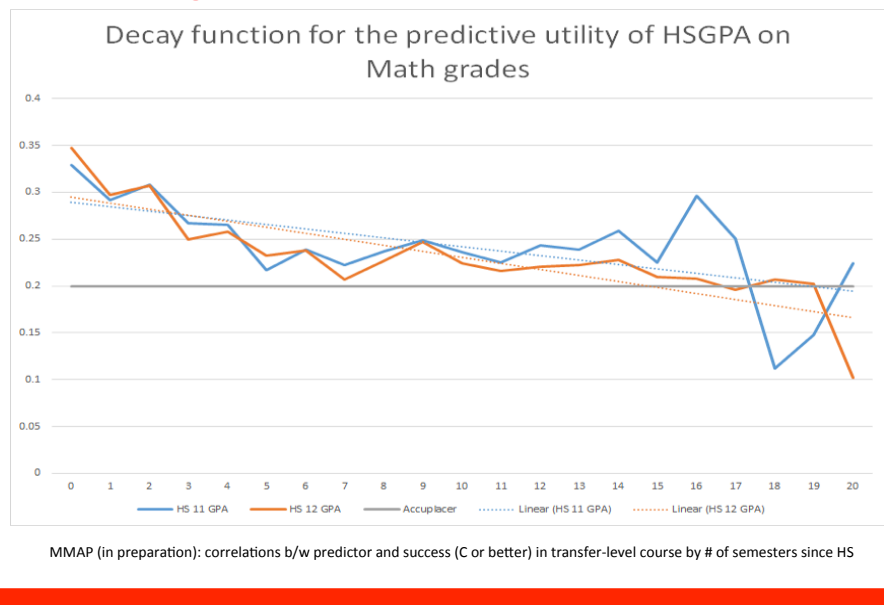

IES Report on impact of placement into Developmental Education

- Assignment to development education had **no positive and many negative** impacts for moderate to strongly prepared students *(meet at least two: HSGPA >2.5, one course above Algebra 2, SAT (or ACT equivalent) > 840)*: see Table A
  - Completing college-level course in discipline, number of college credits completed, transfer to four-year institution, completion of four-year degree, exiting college in first two years without a degree
- Moderately to strongly prepared students 2-3X as likely to be assigned to developmental education in community colleges vs. public 4-year
- http://bit.ly/IESRemedial

Predicting Transfer-Level English

Decay function for the predictive utility of HSGPA on English grades

MMAP (in preparation): correlations b/w predictor and success (C or better) in transfer-level course by # of semesters since HS

Predicting Transfer-Level math

Decay function for the predictive utility of HSGPA on Math grades

MMAP (in preparation): correlations b/w predictor and success (C or better) in transfer-level course by # of semesters since HS

GPA vs. Self-reported HSGPA

ACT, 2013: http://bit.ly/ACTSRGPA

HSGPA Level	N	Mean HSGPA		Mean diff.
		Actual	Self-reported	
3.50–4.00	599	3.79	3.75	–0.04
3.00–3.49	451	3.24	3.23	–0.01
2.50–2.99	408	2.81	2.76	–0.05
2.00–2.49	265	2.24	2.35	0.11
1.50–1.99	172	1.77	2.04	0.27
0.00–1.49	85	1.03	1.85	0.82
Total	1,980	2.95	3.02	0.07

College Board, 2009: http://bit.ly/CBSRGPA

Table 5
Accuracy of Self-Reported HSGPA by HSGPA Value

Under-reporting was 2-4X as common as over-reporting.

Validating student effort/performance attracts students to college

- "Students were profoundly grateful not to have to take the assessment test." – Canada College Multiple Measures Presentation at RP Group Conference April 8, 2016

- "While students generally like to be treated with respect, a perceived lack of respect is more damaging to the students whose cultural claim on higher education isn't as broadly accepted. They've already internalized some doubt, so they're quicker to take indifference or hostility as confirmation that they don't belong." Matt Reed
  – https://www.insidehighered.com/blogs/confessions-community-college-dean/reflections-upon-re-entry

Enrollments in transfer-level course by students placed in transfer-level by method of placement – Cañada College F2015

English: Compass Placement 52%, MM Placement 79%
Math: Compass Placement 41%, MM Placement 72%

■ Compass Placement ■ MM Placement

http://bit.ly/MMAPLessons