Troubleshooting Acceleration Implementation

Post-Conference Workshop
Strengthening Student Success
October 3-5, 2012

- Katie Hern
  English Instructor, Chabot College
  Director, California Acceleration Project
  khern@chabotcollege.edu

- Myra Snell
  Math Professor, Los Medanos College
  Lead Math Faculty, California Acceleration Project
  msnell@losmedanos.edu

CALIFORNIA ACCELERATION PROJECT

Supporting California's 112 Community Colleges
To Redesign Developmental English and Math Curricula
And Increase Student Completion

An initiative of the California Community Colleges' Success Network (3CSN), with support from the Walter S. Johnson Foundation, LearningWorks, and "Scaling Innovation," a project of the Community College Research Center funded by the William and Flora Hewlett Foundation

http://cap.3csn.org/

For more information, contact Katie Hern
khern@chabotcollege.edu

Making the Case for Acceleration

What's the Problem?

- The more levels of developmental courses a student must go through, the less likely that student is to ever complete college English or Math.

Bailey, Thomas. (February 2009). Rethinking Developmental Education. *CCRC Brief*. Community College Research Center. Teachers College, Columbia University.

Nationwide Data
256,672 first-time degree-seeking students from 57 colleges participating in Achieving the Dream

Students' initial enrollment in developmental sequence	**% of students who successfully complete college-level gatekeeper course in subject**
Reading	
1 Level Below College	42%
2 Levels Below College	29%
3 Levels or More Below College	24%

Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges (CCRC Working Paper No. 15). By: Thomas Bailey, Dong Wook Jeong & Sung-Woo Cho. December 2008. New York: Community College Research Center, Teachers College, Columbia University. (Revised November 2009).

Nationwide Data

256,672 first-time degree-seeking students from 57 colleges participating in Achieving the Dream

Students' initial enrollment in developmental sequence	**% of students who successfully complete college-level gatekeeper course in subject**
Math	
1 Level Below College	27%
2 Levels Below College	20%
3 Levels or More Below College	10%

Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges (CCRC Working Paper No. 15). By: Thomas Bailey, Dong Wook Jeong & Sung-Woo Cho. December 2008. New York: Community College Research Center, Teachers College, Columbia University. (Revised November 2009).

DISPROPORTIONATE IMPACT ACROSS CALIFORNIA

- Black and Latino students are much more likely to be placed 3-4 levels below college math:

Black students:	61%
Latino students:	53%
White students:	34%
Asian students:	32%

- Non-white students are much more likely to be placed 3-4 levels below college English:

Black students:	25%
Asian students:	19%
Hispanic students:	18%
White students:	8%

Perry, M.; Bahr, P.R.; Rosin, M.; & Woodward, K.M. (2010). Course-taking patterns, policies, and practices in developmental education in the California Community Colleges. Mountain View, CA: EdSource.

Why high attrition rates are a structural problem

For students placing two levels below a college course in English/Math, there are 5 “exit points” where they fall away:

- Do they pass the first course?
- If they pass, do they enroll in the next course?
- If they enroll, do they pass the second course?
- If they pass, do they enroll in the college-level course?
- If they enroll, do they pass the college-level course?

Students placing three levels down have 7 exit points.

WHY HIGH ATTRITION RATES ARE A STRUCTURAL PROBLEM

Chabot College pipeline data for students beginning two levels down from college composition and tracked for three years:

• Do they pass the first course?	66%
• If they pass, do they enroll in the next course?	93%
• If they enroll, do they pass the second course?	75%
• If they pass, do they enroll in the college-level course?	91%
• If they enroll, do they pass the college-level course?	78%

$$(0.66)(0.93)(0.75)(0.91)(0.78) = 33\%$$

Fall 2006 Cohort. Students tracked from their first developmental English enrollment and followed for all subsequent English enrollments for 3 years. Pass rates includes students passing on first or repeated attempts within timeframe. Basic Skills Cohort Tracker, DataMart.

How would increasing first-course success impact overall completion rate?

$$(0.66)(0.93)(0.75)(0.91)(0.78) = 33\%$$

Try it out…

What if we got the first course to 75% success?

80% success?

90% success?

(Keep the other numbers the same)

The inevitability of attrition in sequences

Table 1: Illustration of the multiplication principle

How many students will pass the college-level course?			
If this was the student's initial placement…	And these were the rates at which they passed each class and persisted to the next class in the sequence…		
	70%	80%	90%
1 level below transfer	34%	51%	73%
2 levels below	17%	33%	59%
3 levels below	8%	21%	48%

Hern, K. & Snell, M. (June/July 2010). Exponential Attrition and the Promise of Acceleration in Developmental English and Math. *Perspectives.* Berkeley, CA: RP Group.

Bottom Line

We will never significantly increase completion rates of college English and Math unless we reduce the length of our developmental sequences and eliminate the many exit points where students fall away.

ONE WELL-ESTABLISHED MODEL OF ACCELERATED READING & WRITING

Chabot College

English 102:

Reading, Reasoning, and Writing (Accelerated)

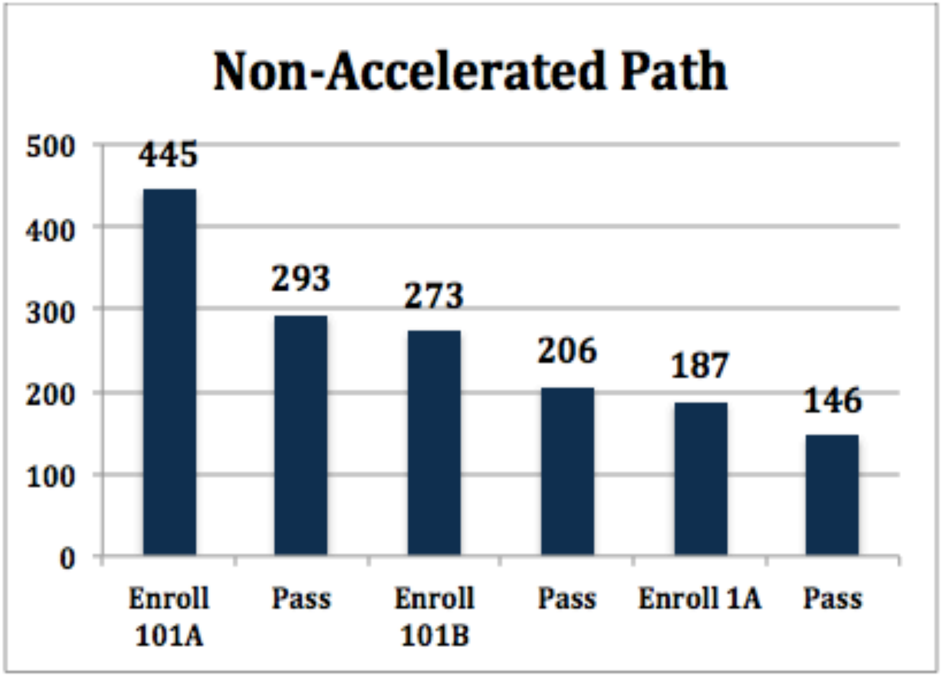
A one-semester 4-unit developmental English course leading directly to English 1A

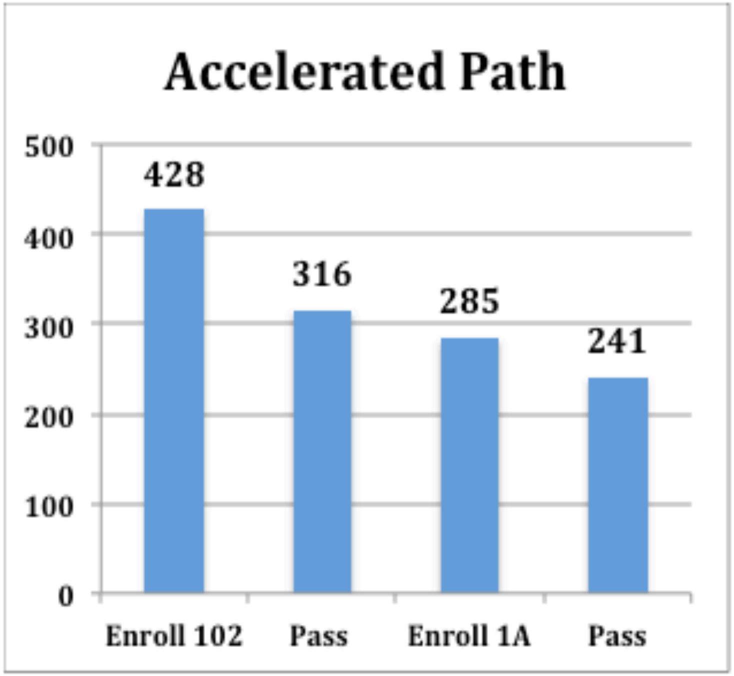
- An alternative to two-semester, 8-unit sequence
- No minimum placement score, students self-place in either the accelerated or two-semester path
- Developed with "backwards design" from college English: Students engage in the same kinds of reading, thinking, and writing of college English, with more scaffolding and support
- College has expanded accelerated offerings in last decade: in Fall '11, course constituted 75% of entry-level sections

EVIDENCE ACCELERATION WORKS:

Significant increase in students persisting to and passing college English

Fall 2006 Cohorts





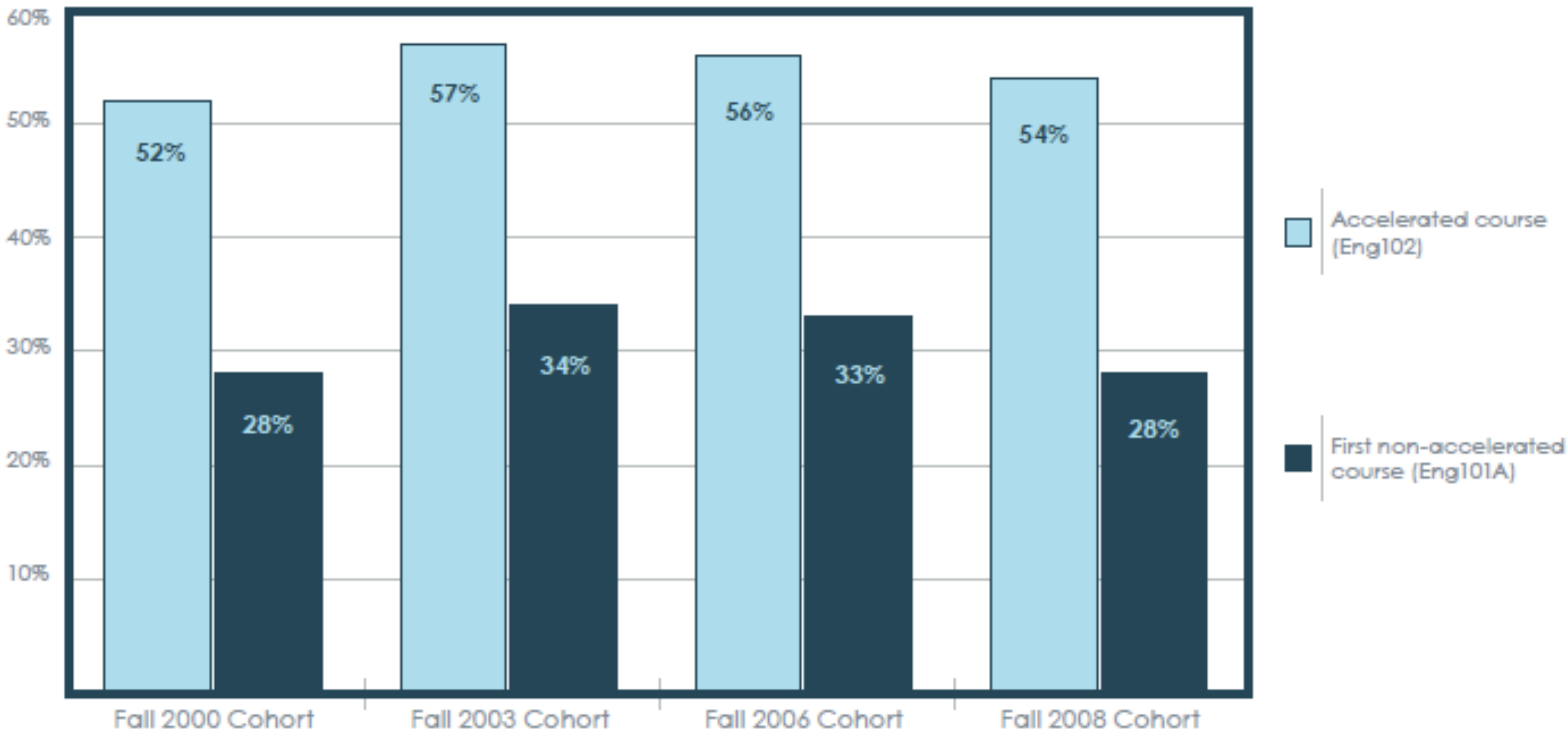
Students completing college English: 33%

Students completing college English: 56%

Data from the Basic Skills Progress Tracker, Data Mart, California Community Colleges Chancellor's Office. Students are followed for three years from their first enrollment in a basic skills English course (English 101A or 102) and tracked for all subsequent enrollments in English, including repeats.

EVIDENCE ACCELERATION WORKS:

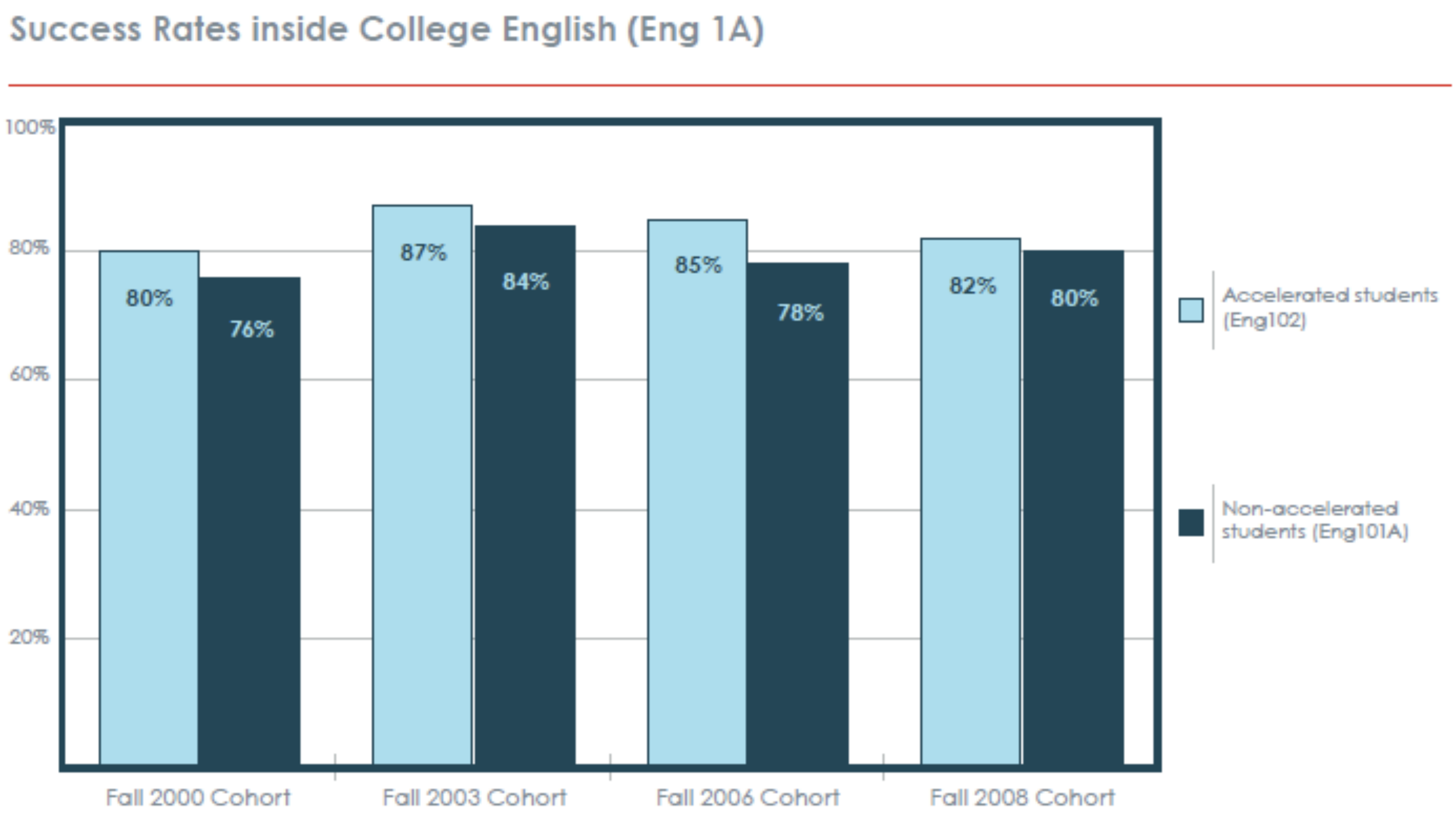
Differences in completion rates are consistent over ten years, as the majority of developmental students have been channeled into the accelerated path



N = 1,605 accelerated students; 1,996 non-accelerated students. [2]

EVIDENCE ACCELERATION WORKS:

When Chabot accelerated students get to college English, they do as well or better than students from the longer track (and many more actually get there!)



Success = Grades of A, B, C, and CR.

N= 1,058 accelerated students enrolling in English 1A, 772 non-accelerated students.

ONE NEW MODEL OF ACCELERATED DEVELOPMENTAL MATH:

Path2Stats, Los Medanos College

A 6-unit developmental Math course with no prerequisite:

- Intended for non-STEM students
- Bypasses standard 4-course sequence leading to Pre-Calculus
- Developed through "backwards design" from college Statistics:
  - Includes those elements of algebra and arithmetic relevant to Statistics (plus a few others)
  - "Just-in-time remediation" of relevant algebra and arithmetic as students engage in statistical analysis
- Successful students eligible to take college Statistics
- Offered since 2009

RATIONALE FOR Path2Stats

- **Misalignment of Developmental Math with Statistics**

Algebra Skills needed for Statistics

Table of Contents from a traditional Elementary & Intermediate Algebra text

(EMERGING) EVIDENCE ACCELERATION WORKS: Proof of Concept

Los Medanos College
Completion of Transferable Math Requirement

Student placement in traditional math sequence	Traditional Path % of students who successfully complete any college-level math course (in three years)	Path2Stats % of students from pre-stats course who successfully complete statistics (in one year)
Transfer-level		100% (3 of 3)
Intermediate Algebra	33% (215 of 651)	82% (18 of 22)
Elementary Algebra	17% (102 of 598)	78% (25 of 32)
Pre-algebra or Arithmetic	9% (45 of 507)	38% (21 of 55)
Unknown placement		57% (4 of 7)
Overall Completion Rate	21% (362 of 1756)	60% (71 of 119)

They pass Statistics, but did they LEARN Statistics?

Snapshots of student achievement:

- In Statistics, Path2Stats students have more A's and B's, fewer D's and F's, than students from the algebra sequence.
- In Statistics, first cohort outperformed Honors section on departmental final exam. In last departmental assessment of student performance in Statistics, 100% of Path2Stats students were rated proficient or better on 2 of 3 course learning outcomes, 82% on the 3rd LO.
- On items from national statistics exam, Path2Stats students overall performance is within 3% of national average.

FURTHER PROOF OF CONCEPT

Early Data from Colleges in the CAP Community of Practice, 2011-12

	<u>Traditional Algebra Path</u> Student completion of any transferable math course (in 3 years)	**<u>Pre-Statistics Path</u>** Student completion of transferable statistics course (in 1 year)
National Data	20%	N/A
Los Medanos College	21%	60% (71 of 119)
City College San Francisco	17-19%	37% (30 of 81)
Cuyamaca College	20%	81% (22 of 27)
College of the Canyons (PALS: Pre-stat and stats in one semester)	12-16%	78% (39 of 50)

Final Thoughts on Open-Access, One-Semester Classes

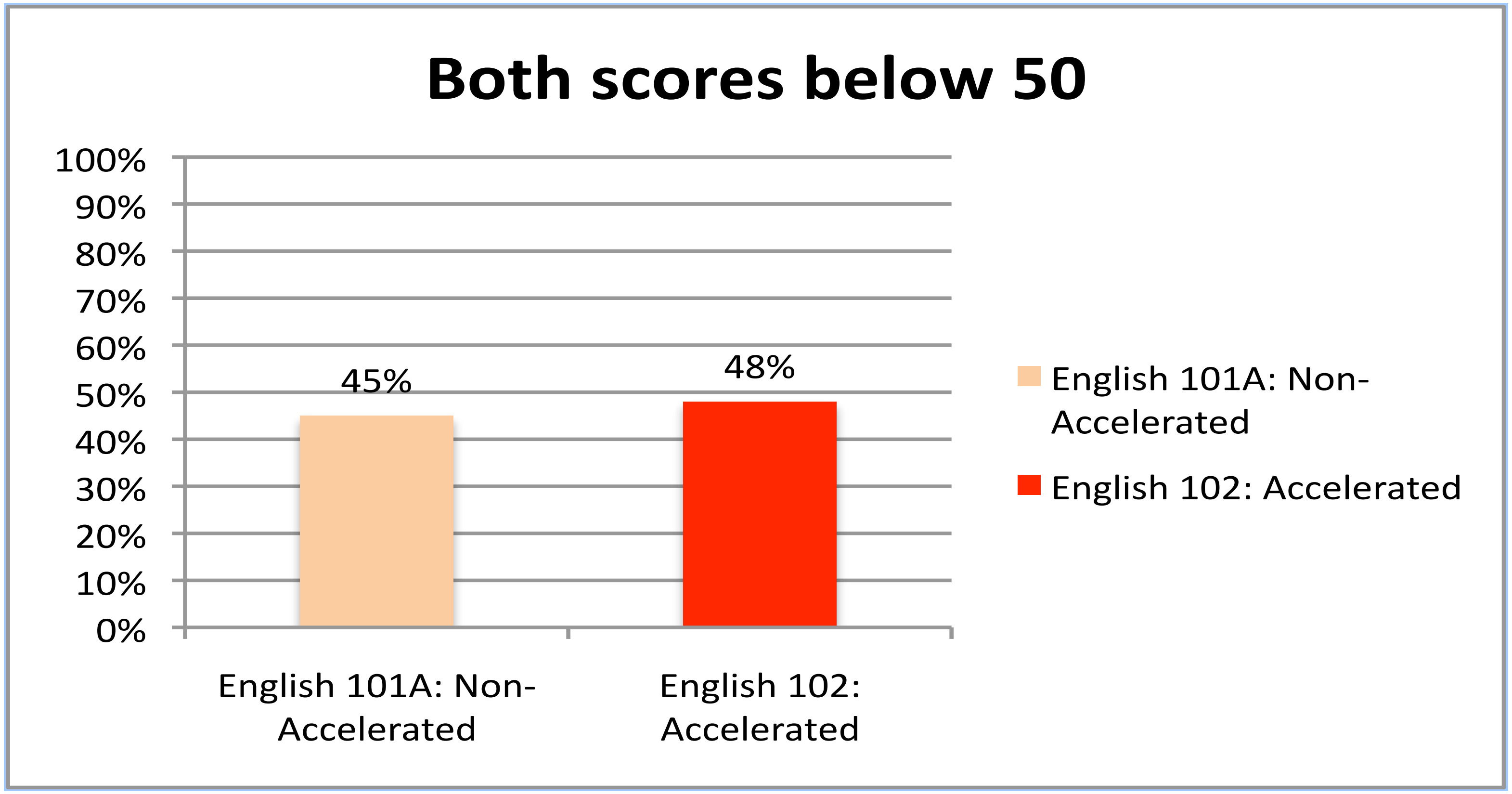
People often have a hard time with the concept of an open-access class one-level below college English or Math:

“One semester? *No* minimum placement score?!”

“But don’t *some* students need a slower path? The ones with very low skills?”

What about students with very low scores?

Success rates in 1st developmental course at Chabot



Both scores below 50 = bottom 7% of Chabot students

N = 205 non-accelerated, 126 accelerated. Spring 06-Fall 09.

PLACEMENT DATA

Where would Chabot accelerated students have placed at another college? And how did they do in the accelerated class?

Table 2: Student success in accelerated course by College X placement levels

College X Placement Levels and Cut Scores	Number of students in Chabot's accelerated course with scores at each level	Success Rate in Chabot's accelerated course
Transfer level: 95 or above	75	81%
1 level below: 72-94	1507	68%
2 levels below: 41-71	1062	52%
3 levels below: 40 or lower	72	57%
Total	2716	62%

College X weights the Accuplacer reading and sentence scores equally: (R+S)/2

PLACEMENT DATA

“Knowing a student’s placement score does not meaningfully enhance our ability to predict whether that student will pass or not. … Placement scores explain only about 3% of the variation in students’ pass rates."

Cabrillo College Institutional Researcher Craig Hayward, after analyzing eight semesters of data from Chabot’s accelerated course and the English course two-levels down (n= almost 5,000 students).

Bottom Line:

- If we know we'll lose more students in the longer sequence, and they don't even pass the slower-paced courses at higher rates, can we really keep thinking the longer path is the better choice for low-scoring students?

Role Play

- Anticipate objections you may encounter from colleagues re: accelerating and redesigning your sequence. How will you respond? Your goal: open up space for innovation.

Resources for Making the Case

- cap.3csn.org
  - Basic Skills Cohort Tracker
  - Change magazine article by Katie (June 2012)
  - Perspectives article by Katie & Myra (May/June 2010)
  - Studies by CCRC re: unreliability of placement tests
  - Webinar by Katie & Myra (May 2011)

Developing Pilots

Some possibilities…

Compression Models

Combining multiple levels of a sequence in an intensive format in the same semester (courses unchanged)

Examples:

- MATH PATH at LMC: Elementary and Intermediate Algebra in one semester, with a support course. For 1st two cohorts, Elementary Algebra success rates are 13-33% higher than stand-alone course; completion of combined sequence is 2 to 3.6 times that of students in traditional pipeline (over 3-4 semesters). (More on this later in the presentation)
- PALS at College of the Canyons: Compression used in math and English. Course success rates are 12-24% higher than traditional format. Compared to traditional pipeline, completion rate of the multi-course sequence doubles for English and is approximately 3.5 times as high in math. (Source: COC Office of Institutional Development and Technology, PAL Program Analysis Fall 2008)

Mainstreaming Models

Placing developmental students into a transfer level course with additional support built in:

- Supplemental Instruction or additional lab hours or
- Support course paired with transfer-level course

Example: Community College of Baltimore County

Completion of College English	
Remedial sequence	40%
Accelerated Learning Program (ALP)	75%

Jenkins, D. et al (Sept. 2010). A Model for Accelerating Academic Success of Community College Remedial English Students: Is the Accelerated Learning Program (ALP) Effective and Affordable? (CCRC Working Paper No. 21). New York: Community College Research Center, Teachers College, Columbia University.

Skip Model: Fullerton College

Sections of a 4-unit developmental course two levels below college English taught to outcomes of the course *one* level below; “college ready” students can skip to transfer level

Early Results: Spring 2012 Pilot Semester	
Enrolled in accelerated sections two-levels-below transfer	100% (102 students)
Retention (completed full semester)	88% (90 students)
Success (passed course)	78% (80 students)
Advanced to one-level-below transfer (no skip)	22% (20 students)
Advanced to transfer-level English course (skip)	59% (60 students)

Percentages follow the original cohort of students.

Modularized Redesign

Replacing the traditional course sequence with individualized learning modules

- Fine grained diagnostic tests assess incoming student levels
- Self-paced
- Skills based, often aided by computer software

Example: Cleveland State Community College has doubled college-level math enrollment, which now exceeds developmental math enrollment. But at 20 institutions, only 13% of 54 dev. math courses saw improvements in course success rates. Yet, 85% saw improvements in student learning outcomes for course completers. No data is available on completion rates of college level math.

Source: National Center for Academic Transformation, July 2012 newsletter
http://www.thencat.org/Newsletters/Jul12.html#5c

Alternative Pathway: Butte College

New 4-unit course 1-level below transfer. Provides a one-semester alternative for students placed two-levels below.

Early Results: 2011-12 Pilot Year	Traditional Sequence	Accelerated Sequence
Enrolled two-levels below	100%	N/A
Passed two-levels below	72%	N/A
Enrolled one-level below	59%	100%
Passed one-level-below	45%	65%
Enrolled transfer-level	39%	63%
Passed transfer-level	31%	45%

Percentages follow the original cohort of students.
Traditional: Tracked 3 yrs, with repeats. Accelerated: 1 year, no repeats

Rethinking Placement

- Changing the placement measure

Long Beach

More than tripled % of students qualifying for 1A by using HS GPA instead of placement tests

- Informed Self-placement

Moorpark

DVC

Contact People: Reading & Writing

Fullerton College

Jeanne Costello, jcostello@fullcoll.edu

Butte College

Leslie Henson, hensonle@butte.edu

Community College of Baltimore County: Developmental students enroll in college level with attached support class

Peter Adams, padams2@ccbc.edu

Long Beach City College: High school GPA used for placement into college English

John Hetts, jhetts@lbcc.edu

Moorpark College: Self-placement into college level

Sydney Sims, ssims@vcccd.edu

Contact People: Math Models

Chaffey College: Intensive 3-week math review, retesting, and late-start courses

Laura Hope, Laura.Hope@chaffey.edu

College of the Canyons: Pre-Stats Course

Kathy Kubo, kathy.kubo@canyons.edu

City College of San Fransicso: Pre-Stats Course

Hal Huntsman, shuntsma@ccsf.edu

Cuyamaca College: Pre-Stats Course

Terrie Nichols, terrie.nichols@gcccd.edu

Contact People: Reading & Writing

Fullerton College

Jeanne Costello, jcostello@fullcoll.edu

Butte College

Leslie Henson, hensonle@butte.edu

Community College of Baltimore County: Developmental students enroll in college level with attached support class

Peter Adams, padams2@ccbc.edu

Long Beach City College: High school GPA used for placement into college English

John Hetts, jhetts@lbcc.edu

Moorpark College: Self-placement into college level

Sydney Sims, ssims@vcccd.edu

Contact People: Math Models

Chaffey College: Intensive 3-week math review, retesting, and late-start courses

Laura Hope, Laura.Hope@chaffey.edu

College of the Canyons: Pre-Stats Course

Kathy Kubo, kathy.kubo@canyons.edu

City College of San Fransicso: Pre-Stats Course

Hal Huntsman, shuntsma@ccsf.edu

Cuyamaca College: Pre-Stats Course

Terrie Nichols, terrie.nichols@gcccd.edu