Developmental Math Initiative

Launch Meeting

April 3, 2012

Goal

Initiative Level

Take program level math at the earliest

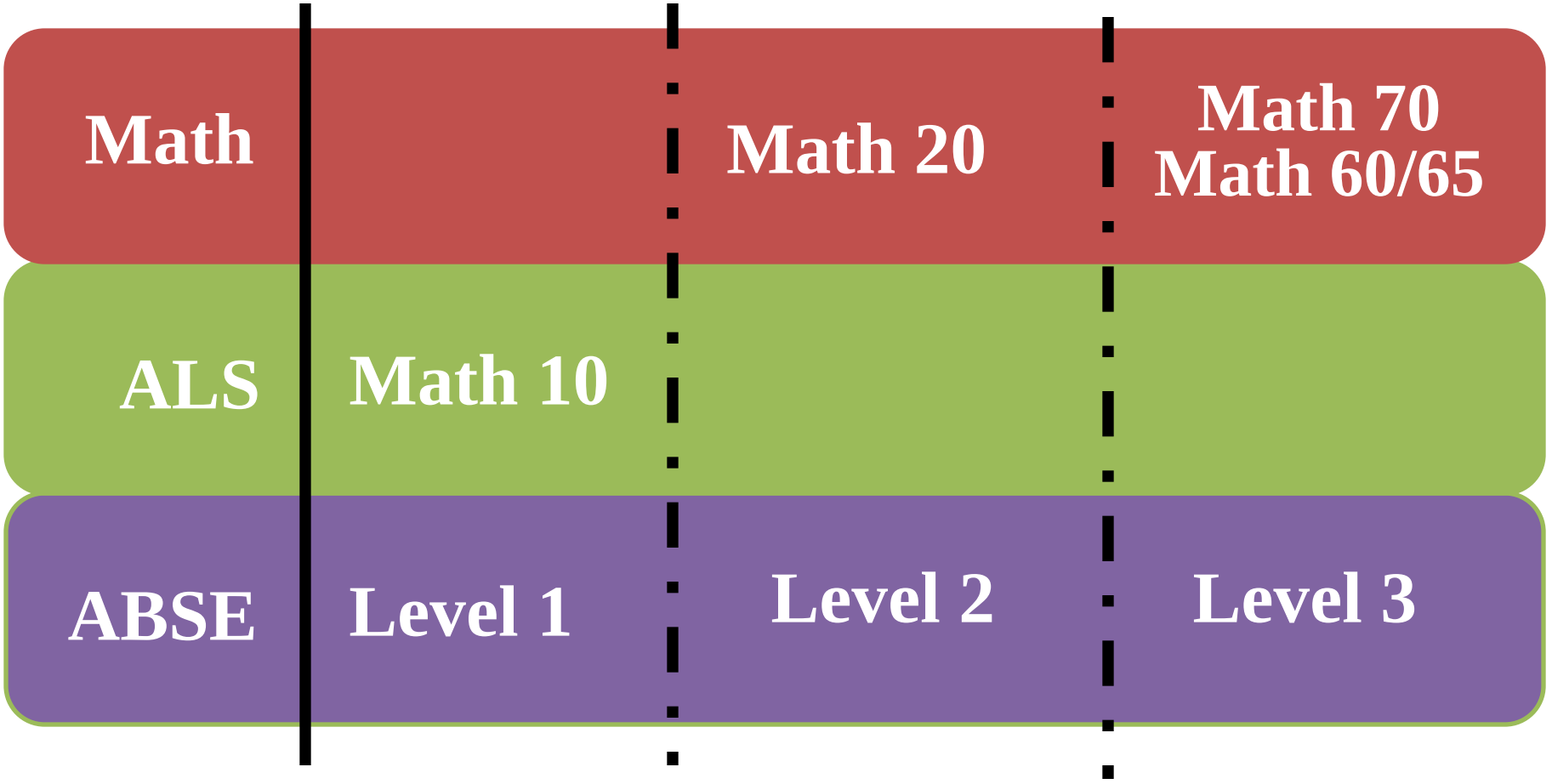
Institutional Level

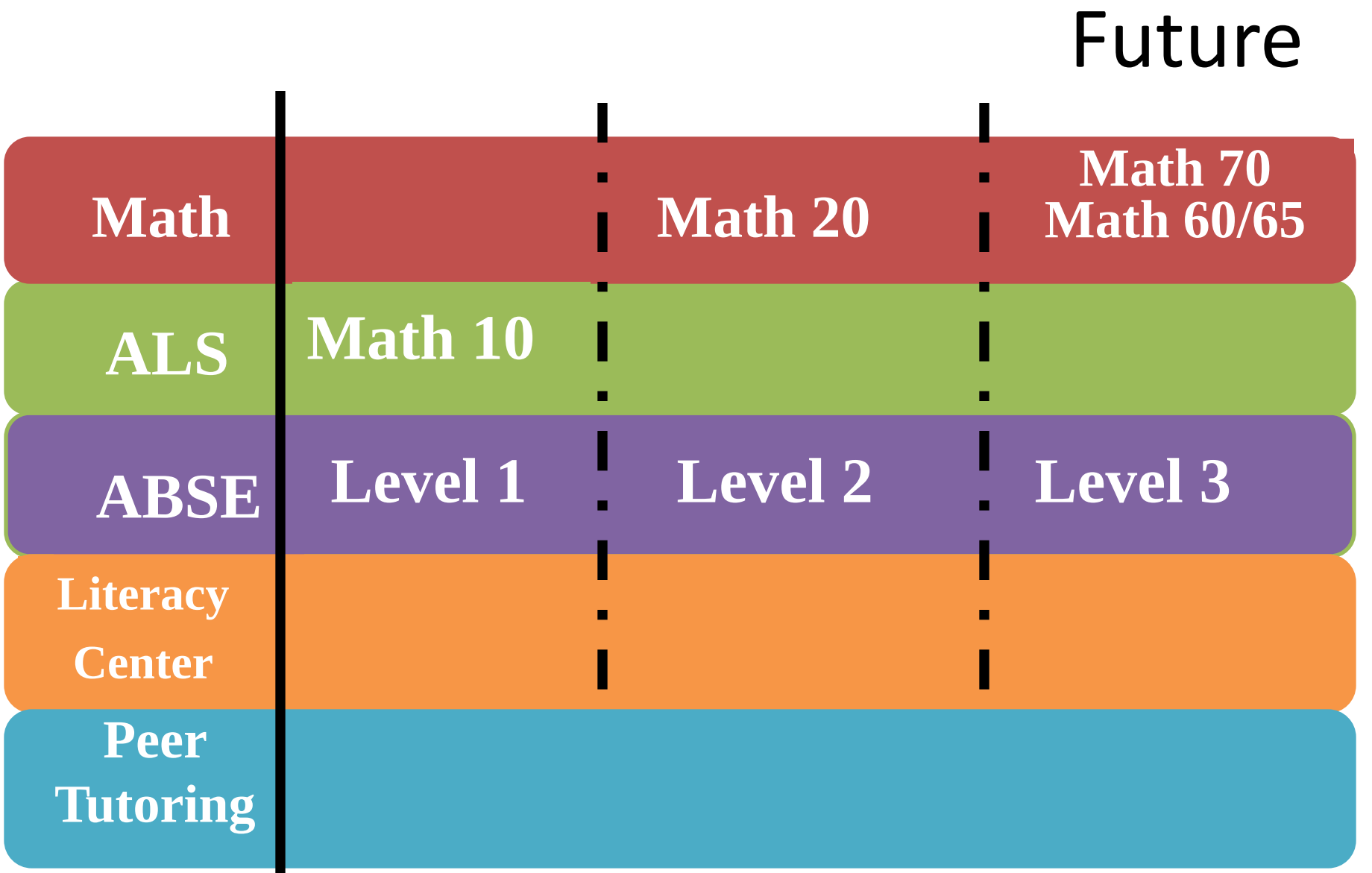
Quality Progression and Completion that is Fiscally Sustainable

Developmental Math?

Definitions….. The unending conversation…..

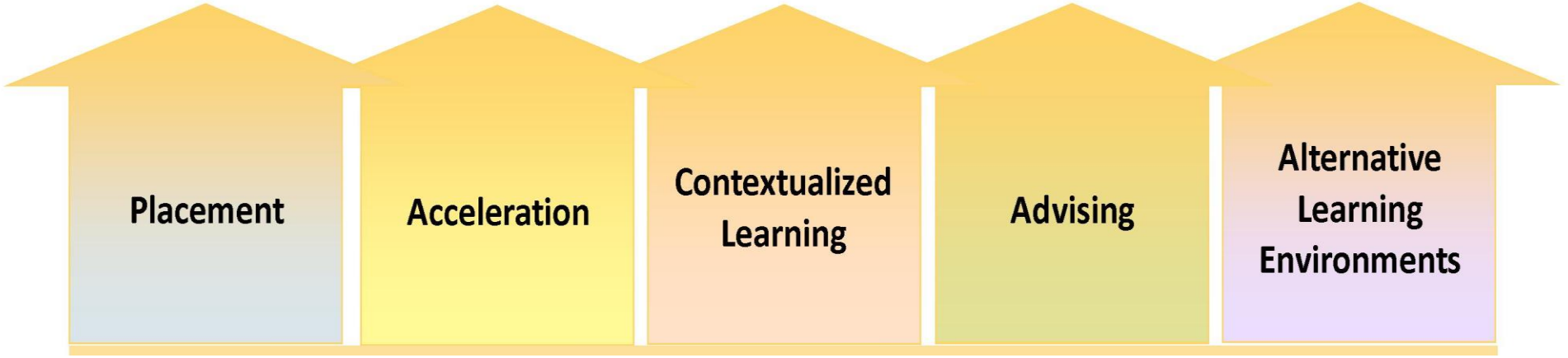
Currently*: A simplistic representation*



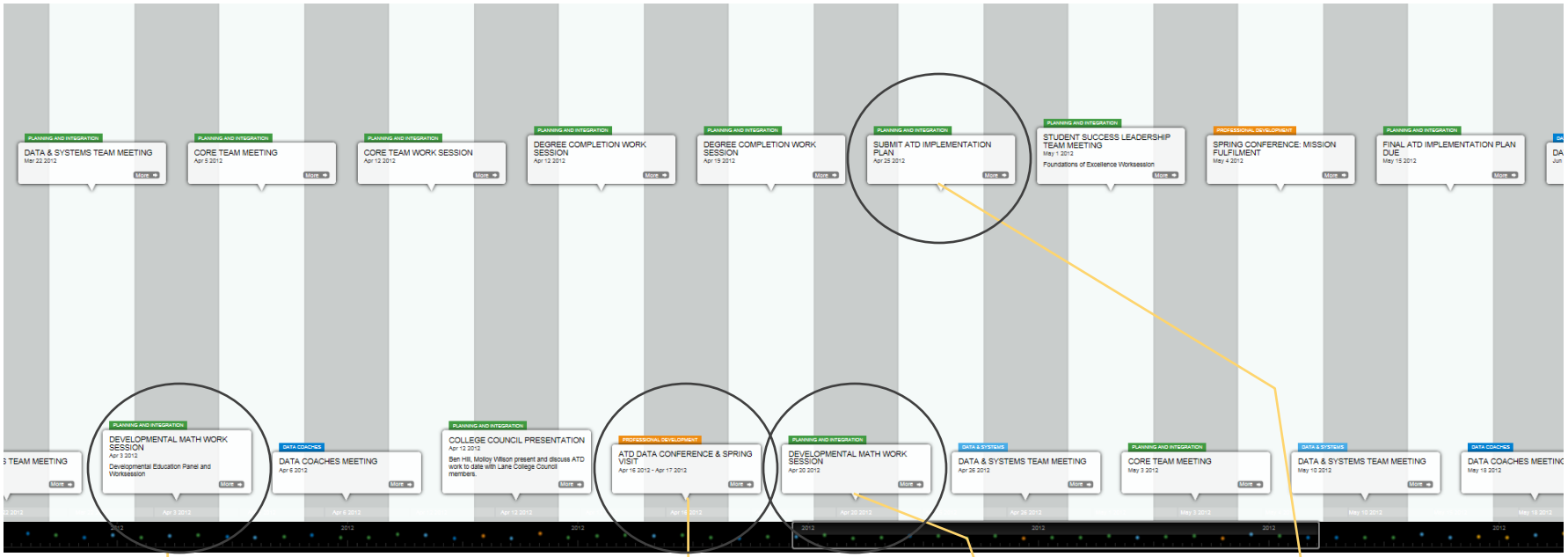

Future
Math
Math 20
Math 70
Math 60/65
ALS
Math 10
ABSE
Level 1
Level 2
Level 3
Literacy
Center
Peer
Tutoring

Timely, Successful Progression and Completion

Developmental through Program Level



Timeline



April 3
Developmental Math Work Session

April 16
(noon-4)
Developmental Math Work Session

April 20
(2-4)
Developmental Math Work Session: Review Draft ATD Implementation Plan

April 25
Submit ATD Implementation Plan

Presentation and Discussion

- Issue & Opportunity
- Data & Evidence
- Established Best Practices
- Feasibility & Alignment

What do you notice?

What would you like to learn more about?

Placement

Issue	Are math placement tests optimally positioning students for success? - *Preparation* - *Diagnostic value* - *Test and cut score validity, reliability*
Opportunity	Adopt and integrate high impact practices in placement to better prepare and place students for progression and completion.

Placement

Data & Evidence

- ATD & SPSS data on placement levels, attempts/completions
- National placement studies
  - *CCRC*
  - *High school GPA correlation*
- SENSE
- Student Surveys

Established Best Practices

- Orientation, preparation
- Boot camp
- Standardized instruments
- H.S. connection

Placement – ATD Cohort

LCC Math Course Initial Placement	Math Placement - ATD Scaling: at or above program level	1 level below	2 levels below	3 levels below	4+ levels below	TOTAL	Valid %	Cumulative %
ABSE				119	317	**436**	**4%**	**4%**
MTH010A			873	52	2159	**3084**	**28%**	**32%**
MTH020		452	24	214	1098	**1788**	**16%**	**48%**
(Q)MTH052	37	4	44	109		**167**	**1%**	**49%**
MTH060	617	73	380	1806		**2876**	**26%**	**75%**
MTH065	38	26	202			**266**	**2%**	**77%**
MTH070	14	8	51			**73**	**1%**	**78%**
MTH095	411	1359				**1770**	**16%**	**94%**
MTH111	685					**685**	**6%**	**100%**
Total	**1802**	**1922**	**1574**	**2300**	**3574**	**11145**		
Valid %	**16%**	**17%**	**14%**	**21%**	**32%**			

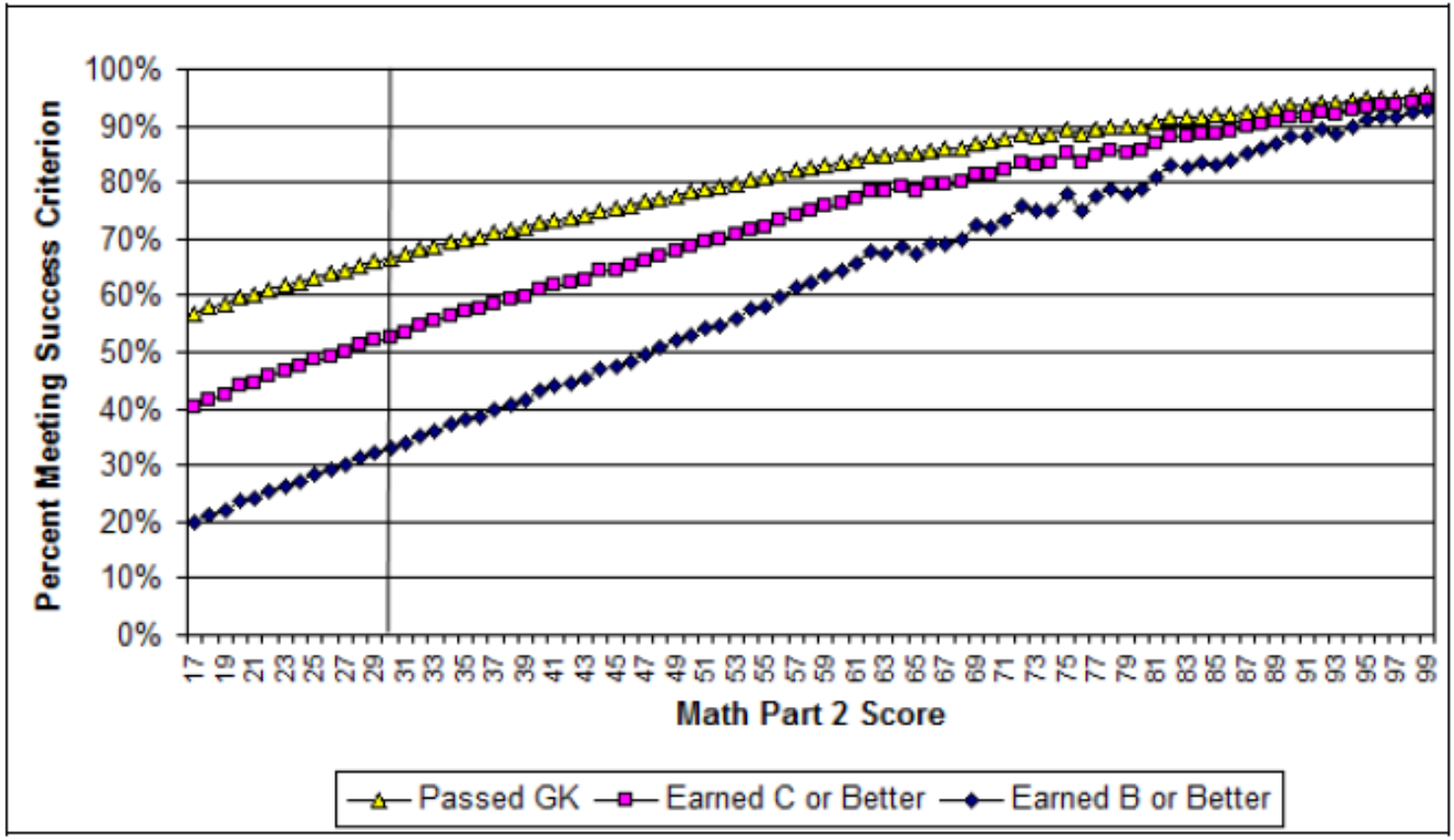
NOTES:

22% of Cases Excluded above due to No Initial Placement or Program Requirement

All ATD students in Fall Cohorts 2006 – 2010

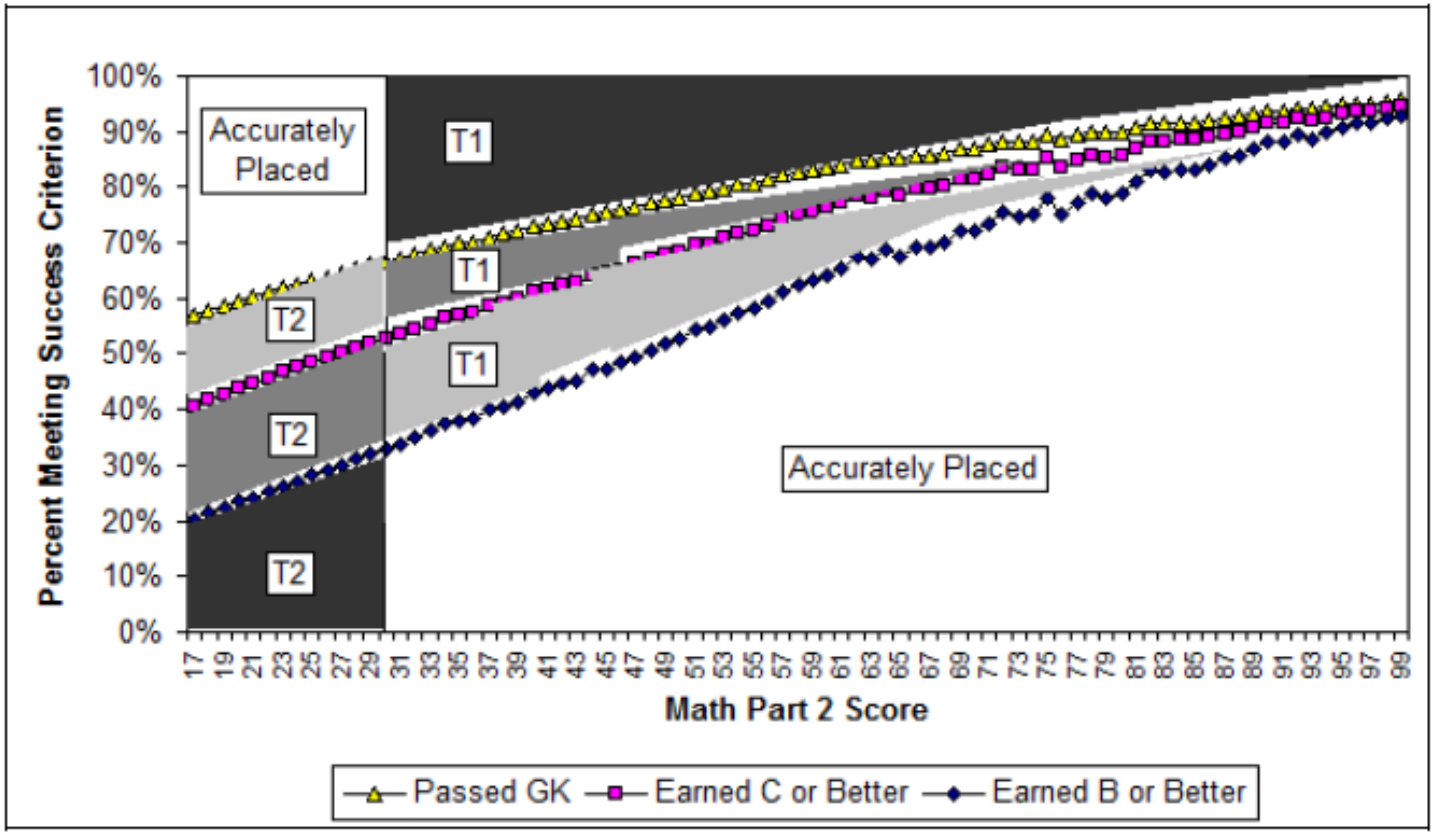
Placement

Figure 3
Probability of Gatekeeper Success, by Math Part 2 Scores



Placement

Figure 5
Probability of Gatekeeper Success, by Math Part 2 Scores



Placement

Feasibility & Alignment

- Existing and Emerging Work at Lane:
  - *Review of efficacy of current placement test and cut scores*
  - *Review of available commercial products that include HS GPA and other HS data*
  - *Development of "boot camp" and other online interactive review materials to prepare students for placement tests*
- Leveraged Funding and Other Resources:
  - *Initiatives through R&D, Curriculum Development*
  - *Additional grant opportunities?*

- "If remediation does not substantially improve remediated students' probabilities of success, then this exacerbates the cost of underplacement mistakes and may lead policymakers to prefer strategies that place more students directly into college-level courses, even if the percentage succeeding there decreases as a result...

- Given that students ultimately succeed or fail in college-level courses for many reasons beyond just their performance on placement exams, it is questionable whether their use as the sole determinant of college access can be justified on the basis of anything other than consistency and efficiency. Allowing more students directly into college-level coursework (but perhaps offering different sections of college-level courses, some of which might include supplementary instruction or extra tutoring), could substantially increase the numbers of students who complete college-level coursework in the first term, even if pass rates in those courses decline.“

Judith Scott-Clayton

Acceleration

Issue	How do we better support and incentivize students to complete developmental math and reach program level in a timely manner? - *Long developmental math sequence* - *45% of transfer students place 4+ levels below program level* - *20% completion rate in 3 years*
Opportunity	Getting more students to progress through developmental math and complete program level math sooner could improve transfer rates and completion of credentials.

Acceleration

Data & Evidence

- ATD & SPSS Data
- IRAP studies
- Adelman, et. al.
- CCSSE

Acceleration

Developmental Math | Developmental English | Developmental Reading | Attainment

Attainment - ATD College: Lane Community College

Home | Analytical Tool | Help Desk

Data Filters

Referred to a Dev Ed Course? Total

Age during first term Total

Gender Total

Race / Ethnicity Total

Attainment Metrics

Select Year Since Initial Enrollment (for graph and table below): Year 3

Graph 1. Percentage of students still enrolled during selected year (not cumulative), or who transferred or earned a degree at any time, by the end of selected year (cumulative over time).

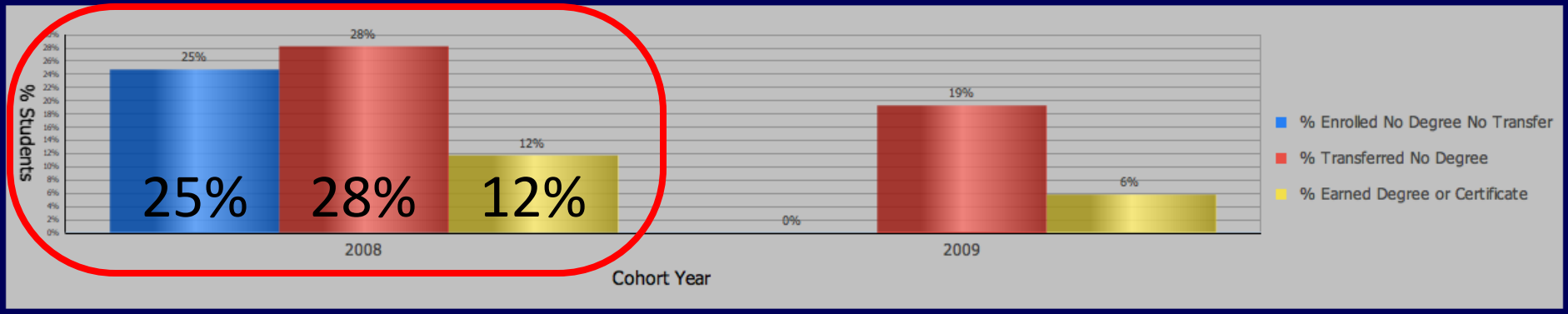


Table 1. Number of students still enrolled during selected year (not cumulative), or who transferred or earned a degree at any time, by the end of selected year (cumulative over time).

Cohort Year	# Students (Denominator)	# Enrolled No Degree No Transfer	# Transferred No Degree	# Earned Degree or Certificate	# Attainment Total	% Attainment Total
2008	2,973	734	839	348	1,921	65%
2009	3,313	0	639	191	830	25%

Acceleration

Placement by CTE | Transfer

Initial Placement Relative to Program Requirements
Split by Transfer/CTE

		Math	Writing	Reading
Transfer Students	at or above program level	**6%**	**56%**	**77%**
	1 level below	**19%**	**20%**	**13%**
	2 levels below	**3%**	**9%**	**9%**
	3 levels below	**27%**	**8%**	**1%**
	4 or more levels below	**45%**	**7%**	
	Total	**100%**	**100%**	**100%**
CTE Students	at or above program level	**30%**	**45%**	**72%**
	1 level below	**15%**	**23%**	**14%**
	2 levels below	**34%**	**11%**	**12%**
	3 levels below	**10%**	**11%**	**2%**
	4 or more levels below	**10%**	**11%**	
	Total	**100%**	**100%**	**100%**

NOTES:
Students with no 1st term placement scores or program requirements are not included.*
* This is about 20% of all students & includes those flagged for prior credit.

Acceleration

Math Course Success, by Initial Placement: 1st Three Years

Initial Math Placement =	At Program Level	1-3 Levels Below	4+ Levels Below	
Attempted Program-Level Math	**61%**	**42%**	**15%**	% of Total (ATD Tool)
Passed Program-Level Math	**50%**	**32%**	**10%**	% of Total (ATD Tool)
Program-Level Math Success Rate	***83%***	***77%***	***71%***	*Valid % (of attemtps)*
Attempted Below-Program Math, Any Level	**6%**	**74%**	**68%**	% of Total (ATD Tool)
Passed Below-Program Math, Any Level	**5%**	**57%**	**52%**	% of Total (ATD Tool)
Below-Program Math Success Rate, Any Level	***80%***	***77%***	***77%***	*Valid % (of attemtps)*
Passed Highest Below-Program Math	**4%**	**42%**	**16%**	% of Total (ATD Tool)
Highest Below-Program Math Success Rate	***77%***	***75%***	***73%***	*Valid % (of attemtps)*

NOTES:

Data from Fall 2006 - 2008 cohorts.

25% of cases have no initial placement results and are not included here.

Total N = 5950

Acceleration

Established Best Practices

- Review before placement
- Incentives for early registration
- Prerequisites
- Advanced Placement w/SI
- Contextualized instruction
- Student supports (advising, etc.)
- New learning environments (technology)
- Acceleration

Acceleration

Feasibility & Alignment

- Existing and Emerging Work at Lane:

- Leveraged Funding and Other Resources:

Contextualized Learning

Issue	Is subject matter presented in a way that engages students? - *Relevant to life experience* - *Balances specific/general context* - *Links to high demand/high wage occupations*
Opportunity	To create relevant context to help students recognize the purpose and value of basic skills development in their academic progression.

Contextualized Learning

Data & Evidence	• I-Best • CCRC research • Other national studies
Established Best Practices	• Bridge to CNA • PACE • I-Best

Contextualized Learning

Feasibility & Alignment

- Existing and Emerging Work at Lane:
  - *Entry Level Career Pathways*
  - *HOPE*
  - *CASE*
  - *Title II*
  - *Learning Communities*
- Leveraged Funding and Other Resources:
  - *Curriculum development funds*
  - *Pursing Gates and other grants*

Advising

Issue	Students are not accessing academic advising services - *46% of students do not use advising services* - *Poor initial course selection* - *High dropout rate*
Opportunity	Advising will increase student progression and completion by helping students: - *Select programs of study/major* - *Determine academic goals & create academic plan* - *Balance educational & work/life commitments* - *Connect with campus & community resources* - *Recognize need to attempt & complete dev math* - *Understand the need to review before taking placement tests*

Advising

Data & Evidence	• CCSSE data • SOAR data • ATD Data Tool • Anecdotal evidence
Established Best Practices	• Mandatory College/Student Success Seminar • Early Alert System • Math Advising Initiative • Placement testing preparation/review course • Developmental course sections • Halting late registration

Advising

Feasibility & Alignment

- Existing and Emerging Work at Lane:
  - *Testing website now emphasizes the importance of review.*
  - *ATD data and analysis*
  - *Continuing research on national best practices*
- Leveraged Funding and Other Resources:
  - *Title III*
  - *Grants*
  - *Testing staff at area high schools*

Alternative Learning Environments

Issue	Are we best serving our students if we only use traditional classrooms and methods? - *Time/place restrictions of traditional classrooms* - *Group instruction rather than tailored instruction* - *Limited data collection*
Opportunity	Employing alternative learning environments will optimize resources, provide options/access for students' academic needs and increase opportunities for learning analytics.

Alternative Learning Environments

Data & Evidence	• Arizona State University • Carnegie Mellon University • School of One • Purdue University • WCET • Kentucky Community Colleges • Khan Academy
Established Best Practices	• Adaptive Developmental Math • Open Learning Initiative • Middle School math “for the Xbox generation” • Data-Mining the Learning Environment • Predictive Analytics Reporting (PAR) Framework • Learn on Demand • Free World-Class Education

Alternative Learning Environments

Feasibility & Alignment

- Existing and Emerging Work at Lane:
  - *NGLC Online Student Profile*
  - *Moodle Personal Learning Designer*
  - *Moodle Reports*
  - *NGLC Wave III*
  - *IRAP/Distance Learning reports*
- Leveraged Funding and Other Resources: