

Louisiana Believes

Supporting Students Who Struggle in Mathematics (Part 1 of 3)

Supervisor Collaborations - November 2018

Objectives

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- Understand LDOE's beliefs about and strategy for supporting students who persistently struggle
- Analyze the data from the Intensive Algebra I Pilot and connect the strategies of that pilot to the overall strategy for supporting students who persistently struggle
- Locate and use the PD Vendor Guide
- Determine next steps for school systems given the theory of supporting students, Algebra I pilot finding, PD Vendor Guide, and School System Planning Process

Agenda

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- Supporting Students: Beliefs and Strategy
- Intensive Algebra I Pilot
- Impact of the Algebra I Pilot
- PD Vendor Guide
- Next Steps



Supporting Students who Struggle in Math: Beliefs and Strategy

Beliefs About Students

The Louisiana Department of Education believes that all students, including students with disabilities, English learners, and students who persistently struggle, can achieve grade-level standards. To ensure that this vision is realized for all students, the following things have to be true.

Strategy to Support Students

1. All students should access on-grade-level instruction every day through a high quality curriculum in the least restrictive environment.
1. Intervention should supplement instruction and accelerate student progress by preparing students for new learning.
 - a. With students who need additional support to achieve grade-level standards, teachers should employ the supports within the curriculum that scaffold learning during core instruction.
 - b. With students who persistently struggle, teachers should employ more intensive intervention; this should supplement, not replace, the high quality curriculum and embedded supports.
1. All teachers who support struggling learners, including but not limited to general education, special education, English learners, and intervention teachers, should be trained on the curriculum and should plan in a coordinated way to ensure all students are prepared for Tier 1 content during core instruction.

Supporting Students in Math Within that Overarching Strategy

Math instruction for students who persistently struggle should help students access the Tier 1 curriculum content. This requires teachers to:

1. Identify the standard(s) being targeted during core instruction.
2. Identify the pre-requisite standards using the [Remediation Guides](#).
3. Engage students in components of previous grade levels of the Tier 1 curriculum and/or other aligned resources during small group or individualized instruction.

This additional content can be delivered by the general education, special education, and/or intervention teacher. It will be most effective when delivered by a teacher who is trained in the curriculum and engaged in that student's core math classroom.

Supporting Students in Math Within that Overarching Strategy

Answer the following questions on chart paper:

- What percentage of students at your school(s) engage with on-grade-level Tier 1 curriculum every day in math?
- How is time used strategically at your school(s) to provide intervention/remediation for students specifically for math?
- Who specifically (e.g., the student's math teacher, an intervention specialist) provides supports to students who persistently struggle in math?
- What math does the student engage with during that time?

Intensive Algebra I Pilot

The Importance of Algebra I

- Mastery of algebra in particular is a critical step to enrollment and success in a college preparatory math sequence. (Snipes and Finklestein, 2015)
- Math curriculum— especially advanced courses such as algebra and geometry—has a positive effect on college graduation and on earnings later in life. (Rose and Betts, 2001)
- In 2014, 30% of Louisiana students entering college took a remedial course. Approximately 5% of those had completed a gateway course 2 years later.

Takeaway -- Students must be successful in Algebra I for college to even be an option.

Additionally, the California Dropout Research Project found that controlling for all other variables, students who passed Algebra 1 by the end of their freshman year increased the likelihood of graduating on-time by more than 75%. ([Silver, Saunders, and Zarate](#))

A look at the data in Louisiana.....

BSSY	9th Graders Enrolled in LRS	9th Graders Enrolled in Algebra I	Took Algebra I EOC		Passed Algebra I EOC (Good, Fair, or Excellent) *2017 (Basic, Mastery, or Advanced)		Passed Algebra I EOC (Good or Excellent) *2017 (Mastery or Advanced)		# Enrolled in a Higher Course	
			Count	Rate	Count	Rate	Count	Rate	Count	Rate
2013-14	56,523	41,045	35,900	87.5%	29,310	81.6%	19,685	54.8%	8,831	15.6%
2014-15	56,122	42,204	37,377	88.6%	31,036	83.0%	20,368	54.5%	8,524	15.2%
2015-16	57,212	42,833	37,594	87.8%	30,964	82.4%	21,327	56.7%	8,352	14.6%
2016-17	55,461	39,766	37,682	94.8%	31,657	84.0%	22,238	59.0%	8,585	15.5%
2017-18*	52,986	37,402	35,384	94.6%	23,440	66.2%	12,484	35.3%	8,840	16.7%

A look at the data in Louisiana.....

40% of last year's 9th graders are genuinely prepared for the opportunity to be successful in college

- There were 52,986 students in 9th grade.
- 21,324 scores Mastery or Advanced OR were in a higher math course.
- 11,944 scored Unsatisfactory or Approaching Basic.
- 10,956 scored Basic. If you counted these, that would bring the percentage to 61%.
- 2,018 students took the course but did not take the Algebra I EOC.
- 6,744 students did not take Algebra I.

BSSY	9th Graders Enrolled	9th Graders	Took Algebra I EOC	Scored Mastery or Advanced OR	Scored Unsatisfactory or Approaching Basic	Scored Basic	Scored Proficient or Advanced	Scored Proficient or Advanced	Scored Proficient or Advanced	Rate
2013-14										15.6%
2014-15										15.2%
2015-16										14.6%
2016-17				31,657	84.0%	22,238	59.0%	8,585		15.5%
2017-18*	52,986	37,402	35,384	94.6%	23,440	66.2%	12,484	35.3%	8,840	16.7%

The Intensive Algebra I Pilot

During the 2017-18 school year, we began to tackle this problem. We partnered with the College Board, who publishes the Tier 1 high school math curriculum Springboard.

- Springboard built out aligned “skills workshops” at critical points of Algebra I.
- 110 teachers in 50+ districts agreed to pilot Intensive Algebra.
- Students who historically struggled in math had 2 periods of math every day.
- Teachers had 2 days of initial implementation training, a 1-hour monthly webinar, and a 1-day in person training in January.

In a typical day, students engaged with 1 period of aligned, pre-requisite work then 1 period of Algebra I.

The Intensive Algebra I Pilot

Intensive Math Support



**HIGH-QUALITY
CURRICULUM**



APPROPRIATE RESOURCES
(targeted diagnostics,
coherent supports)



**EXTENDED
TIME**

The Intensive Algebra I Pilot: Results

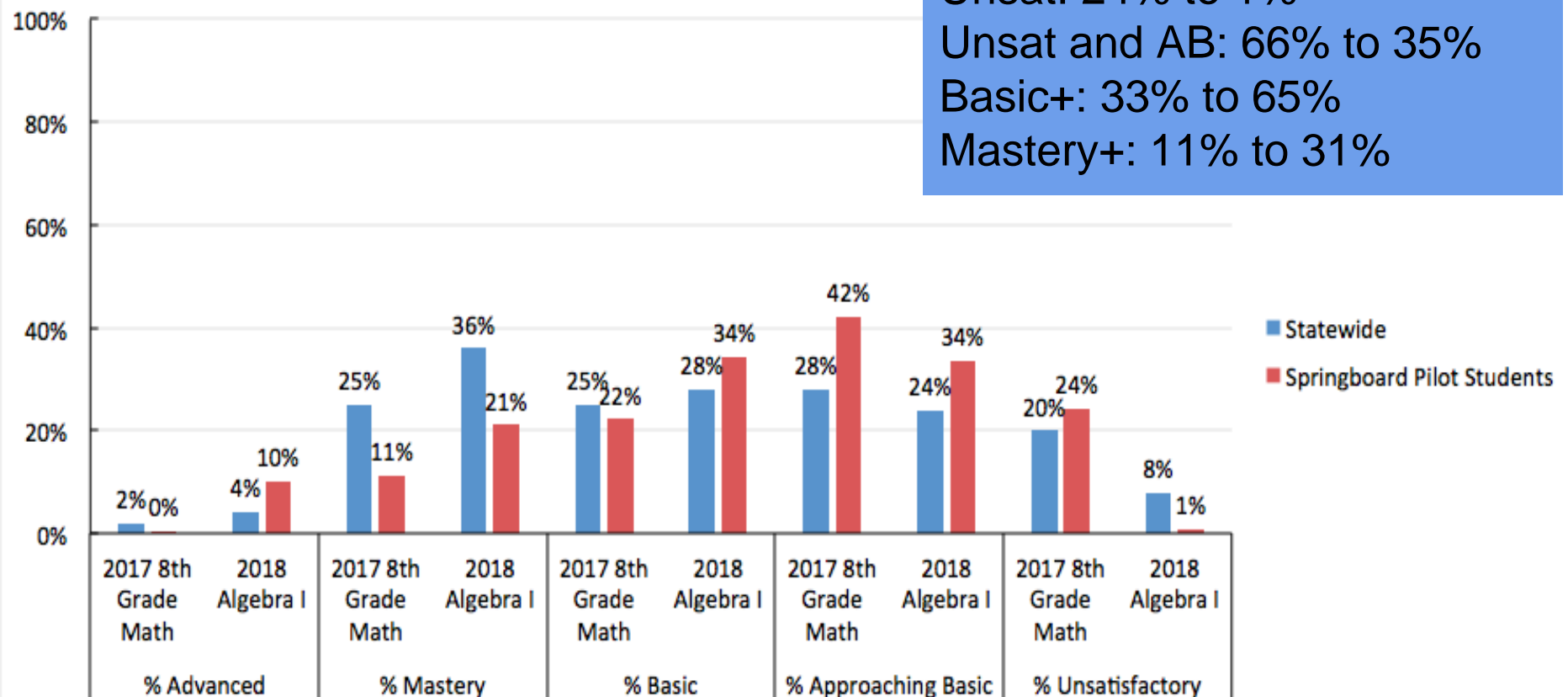
2300+ Students

Unsat: 24% to 1%

Unsat and AB: 66% to 35%

Basic+: 33% to 65%

Mastery+: 11% to 31%



Impact of the Algebra I Pilot

Impact

How did the Algebra I Pilot concretize the overall strategies for supporting students who struggle?

1. All students should access on-grade-level instruction every day through a high quality curriculum in the least restrictive environment.
1. Intervention should supplement instruction and accelerate student progress by preparing students for new learning.
 - a. With students who need additional support to achieve grade-level standards, teachers should employ the supports within the curriculum that scaffold learning during core instruction.
 - b. With students who persistently struggle, teachers should employ more intensive intervention; this should supplement, not replace, the high quality curriculum and embedded supports.
1. All teachers who support struggling learners, including but not limited to general education, special education, English learners, and intervention teachers, should be trained on the curriculum and should plan in a coordinated way to ensure all students are prepared for Tier 1 content during core instruction.

Impact

How did the Algebra I Pilot concretize these math-specific strategies?

Math instruction for students who persistently struggle should help students access the Tier 1 curriculum content. This requires teachers to:

1. Identify the standard(s) being targeted during core instruction.
2. Identify the pre-requisite standards using the [Remediation Guides](#).
3. Engage students in components of previous grade levels of the Tier 1 curriculum and/or other aligned resources during small group or individualized instruction.

This additional content can be delivered by the general education, special education, and/or intervention teacher. It will be most effective when delivered by a teacher who is trained in the curriculum and engaged in that students' core math classroom.

PD Vendor Guide

2019 PD Vendor Guide

The [2019 PD Vendor Guide](#) was released on November 1; it identifies vendors who specialize in helping school systems and schools with designing and implementing a cohesive academic system focused on high-quality curriculum, professional development, and assessment. Updates to this guide include:

- a Table of Contents organized by curriculum, making it easier for school systems to identify all vendors providing training on their selected curriculum,
- specific call-outs for trainings that target approaches to support students who have been identified as SPED or EL,
- and sample year-long partner plans to help school systems plan initial and ongoing support for teachers.

School systems should use the updated PD Vendor Guide for School System Planning.

2019 PD Vendor Guide

Review the [2019 PD Vendor Guide](#).

- Identify the vendors who provide training on the math curriculum that your schools use.
- Review their training options, particularly the options that address subgroups of students that often struggle in math.
- Review the sample long-term partnership model.
- Determine the ideal partner and support model for your schools.

Working with Partners

As you build out your School System Plan, you will need to communicate frequently with vendors to ensure they can provide the services that you need in the timeframes you need. This is particularly critical given the months-long timeline of writing the plan, having it approved and spending funds. This means that you should do the following:

- In December, communicate with vendors to ensure they can provide the customized plan that you want
- In February, give vendors a copy of the parts of your plan that you wrote them into
- In March/April, let vendors know if your plan was approved
- In April/May, finalize dates, costs, and contracts for services

Next Steps

Next Steps

1. Answer the following for each school before the January collaboration.
 - a. What percentage of students at each school engage with on-grade-level Tier 1 curriculum every day?
 - b. What percentage of students at each school have small group instruction in class?
 - c. What percentage of students at each school are being pulled out for additional math intervention?
 - d. What are students doing in small groups? During intervention?
 - e. Who at the school determines/influences the work persistently struggling students are doing?

1. When completing your strategy in Super App, use the newly released [PD Vendor Guide](#) to identify initial and ongoing training options for Tier 1 curriculum and supports for students who struggle in math and/or ELA.

1. Join the January collaboration: Supporting Students Who Struggle in Math (Part 2 of 3)

Email STEM@la.gov with questions.