



COLLEGE-READY MATH INITIATIVE: PROGRESS REPORT

College Spark is investing \$12 million over seven years in our College-Ready Math Initiative to help low-income students graduate from high school with strong math skills and avoid remediation in college. The Initiative includes a variety of evidence-based strategies and programs designed to help students develop the math skills they need to avoid remediation in college. The programs include School-Year Academic Youth Development (AYD), Intensified Algebra (IA), Bridge to College transition courses (BtC), and several strategies aimed at increasing equity in higher level math. The content of this progress report comes from BERC and UT Dana Center Reports (2017 and 2018) and focuses on IA and BtC.

Overarching Themes and Challenges Across Programs



Lack of math teachers in Washington is a crisis

The lack of math teachers in Washington is a crisis, especially in small districts. IA teachers receive intensive summer training in how to teach the growth mindset curriculum that helps struggling students master algebra. Some schools ended the school year having not yet filled math teacher vacancies, making it difficult to get teachers trained in IA. Additionally, sudden or mid-year turnover has a detrimental impact on IA students when schools revert to traditional math instruction until another IA teacher can be trained.



Policy does not necessarily change practice

The Smarter Balanced/Bridge to College Placement Agreement was a great step toward reducing remediation rates for Washington students, but even with this agreement in place, 36% of the 2016 high school graduates who should have been eligible to enroll in college-level math enrolled instead in remedial courses. The State Board for Community Colleges, a partner in the College-Ready Math Initiative and leader of the Bridge to College Course is working to address this by ensuring colleges have access to high school transcripts data and by providing grants to regional high school/college partnerships to address this issue, identifying strategies for streamlining the placement process for BtC students, and disseminating promising practices for ensuring students are able to use their SBA score or BtC grade for placement.

The Bridge to College Placement Agreement allows students who earn a 3 or 4 on their 10th grade SBA or pass a BtC course with a B or higher to enroll in college-level courses at all Washington community and technical colleges.



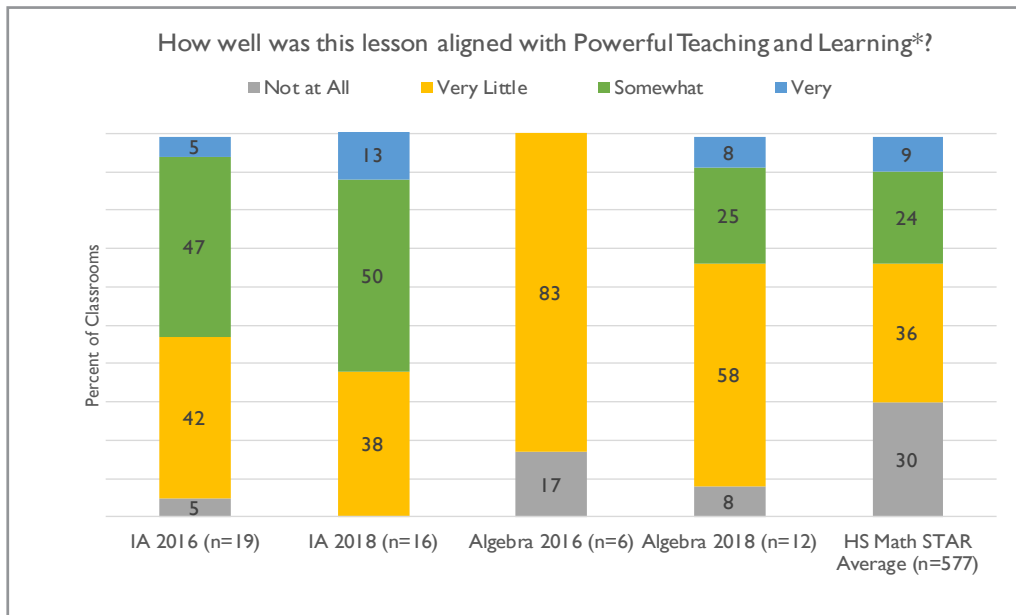
Math departments can be volatile

A couple of schools were achieving promising results for IA students but the program was dropped in spite of these gains when the districts made major shifts to math curriculum district-wide. Schools implementing the broader growth mindset math curriculum from Agile Mind have been more likely to sustain IA - and demonstrate gains for struggling students - than schools implementing just the IA course.



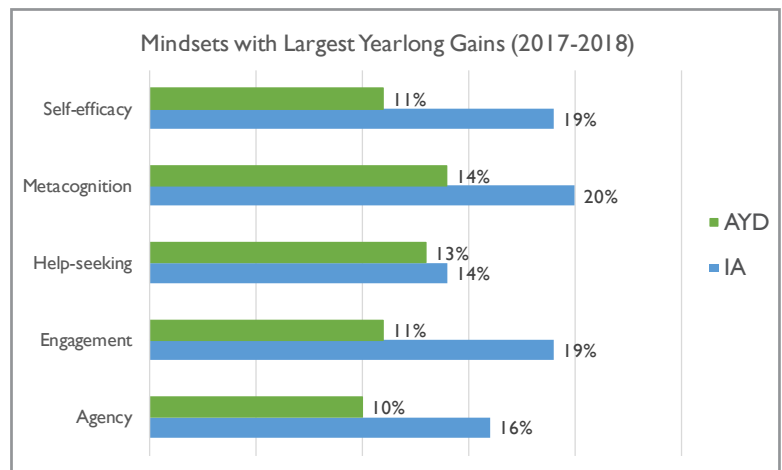
Shifting practice doesn't happen quickly, but it does happen

Evaluators observed stronger instructional practices during the second year of the initiative compared to the first in both IA classrooms and in other math classrooms, and this corresponded to gains in student performance. Some IA teachers commented that they were using their IA training to improve instruction in other math classes, and all of the math teachers at IA schools took part in an Educators Course in Academic Youth Development - a professional development course offered by Agile Mind that is focused on integrating growth-mindset strategies into math instruction.



Growth mindset

For the CRMI districts, growth-mindset work embedded in challenging classes has been more effective than offering it as an add-on or as its own discipline. IA is an algebra course attached to a growth-mindset curriculum and AYD is a growth-mindset curriculum that schools implement in a variety of settings.





Teacher and student perception

Bridge to College and Intensified Algebra teachers and students feel these courses engage students more than traditional courses, prepare them for college-level work, and reflect the kinds of teaching strategies that are needed to help students meet the Common Core State Standards.

What Intensified Algebra teachers are saying:

Students are engaged in the lessons and talking about math. The emphasis on group work and projects has helped to develop this. Students don't give up.. they continue to try tough problems. Metacognition is actually happening!

My IA students are outperforming my Algebra students. Students catch up on skills missed in previous years in IA, allowing them to master Algebra I at a faster pace. In IA, the block period allows us more time to go deeper. I feel like I can do a better job with my instruction. There is a growth mindset we teach with intentionality. What a difference that makes!

Students are not afraid of math anymore. They are willing to try in other areas too, where they would have failed before. I am hoping to see a rise in test scores. These students are well below grade level, but they are improving.

What Intensified Algebra students are saying:

I have an A- in IA. I've never an A in anything. Ever. In my whole life. I actually understand math and can break down a big problem and just solve it.

IA is more engaging than other classes, and our class material is the same or even harder than regular Algebra I and we're doing it. We'll be ready for Geometry. Only we'll actually understand the math we learned, and the other students won't. I know this because I talk to my friends in regular Algebra I, and they are totally lost. We learn to talk about math, and then we talk about it. We talk about it a lot.

I'm more successful; I know more ways to solve problems now. I used to see a math problem and if it was hard not even try. Now, I try it. Sometimes I get stuck, but most of the time I don't. I've learned a lot of math this year, like more math than all of middle school combined.

What Bridge to College administrators are saying:

There is a true bridge being built from this (course) to college. It's taught differently too. It's more Common Core, standards based... It truly is getting kids to see what they are going to see with Common Core. When you hear about critical thinking, you see things in there that are not in traditional math. It's more of a 21st century learning approach with skills students need. Students will be more successful in the future because of what the process emphasizes, the hard work needed, and the growth-mindset promoted. Perseverance is being pushed. I'm trying to get other teachers to teach like this.

PROMISING TRENDS IN THE DATA

Improvements in Teacher Practice and Student Outcomes for IA and BtC

75%

of the BtC math classrooms were aligned with Powerful Teaching and Learning*, compared to 40% of comparison classrooms.

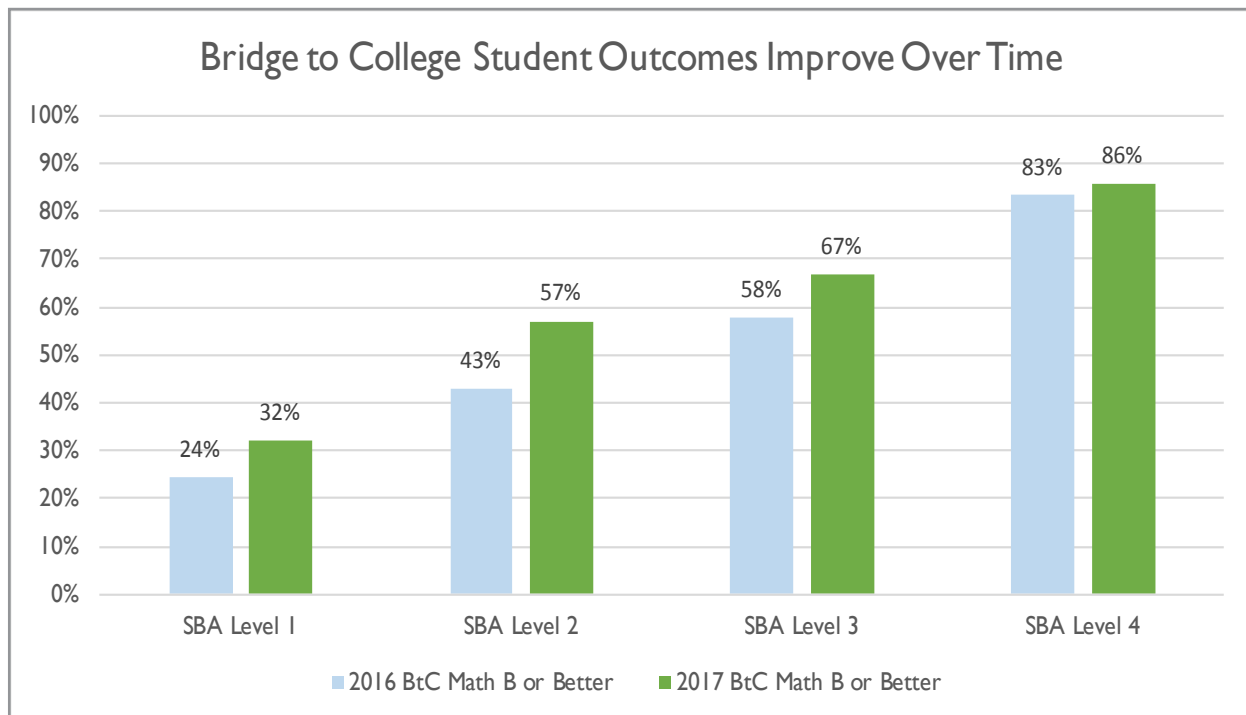
63%

of the IA classrooms were aligned with Powerful Teaching and Learning*, compared to 33% of comparison Algebra classrooms.

Additionally, when looking at observations over time, IA classrooms showed improvement compared to data from 2016, in which 50% of IA classrooms were aligned with Powerful Teaching and Learning. Instruction improved in traditional algebra classes at initiative schools as well. This could be because IA teachers used their training in other math classes or because all of the math teachers at IA schools took part in a professional development course focused on integrating growth-mindset strategies into math instruction called an Educators Course in Academic Youth Development

Student outcomes are also seeing positive shifts. School staff reported seeing improved relationships with peers and teachers, increased confidence in academics, increased self-efficacy, and increased academic performance.

* Powerful Teaching and Learning is a term we use to describe brain-based, reform-like instruction that is characterized by active-inquiry, in-depth learning and performance assessment. Powerful Teaching and Learning is student-centered, builds conceptual skills and knowledge, shows evidence of meta-cognition and personal reflection, is relevant to the learners and is supported by strong relationships.



Bridge to College Bright Spots

Lower Course Failure

Students who earned a Level 1 or 2 on their Math SBA and were enrolled in a Math Bridge course failed at a lower rate (8%) than their peers who took a traditional math course (16-18%).

College Attendance

Bridge students who earned a B or higher in English or Math attended community or technical college at a higher rate (34%) compared to the Washington state average (21%).

College-Readiness

Bridge students are doing about as well as non-Bridge students in college-level math, legitimizing the use of BtC as a college placement mechanism.

What Bridge to College teachers are saying:

It's enriched our math program. The book didn't make them think; it was drill and kill. This added all the enriching activities. That's why I begged to get into the course; it was what our program needed. It's about getting students to stop and think and not just look at math as a formula. We finally found something kids can use.

The kids are engaged in this curriculum with this program. We have not seen that except with our top, top teacher who knows how to connect with kids. They are engaged because the curriculum is strong, and they see a goal for their future with college. When you have a goal to shoot for, a possible reward, you will get motivation.

What Bridge to College students are saying:

The best thing is that I just understand the material a lot better. It's more familiar territory with me for stuff that I'm good at with math. I feel it boosts my confidence up with skills in math.

It isn't like other math classes... students and the teacher help you. It is slower, and you get one-on-one time with the teacher. She doesn't just tell you the math problem - she explains everything and gives it relevance. Not just a robot doing math, you understand why.

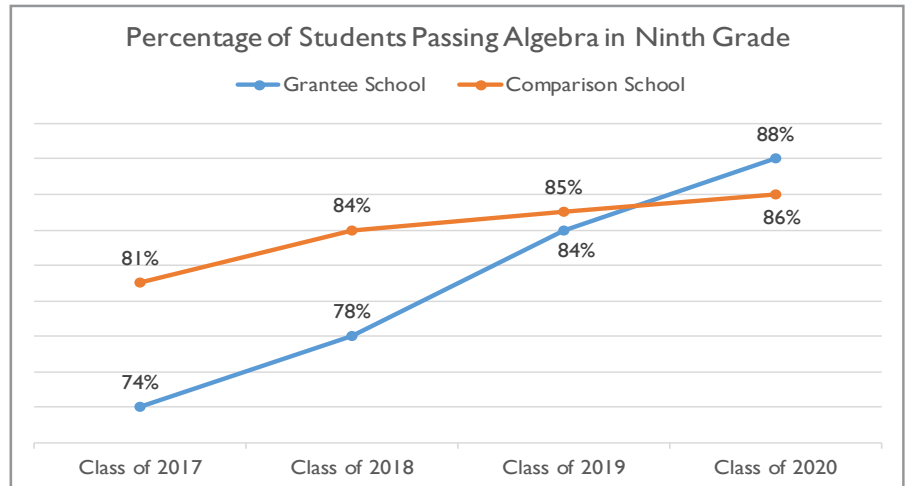
I enjoy math more. If I am confused on something, I feel like I have a way to understand it.

Bridge to College Math takes the skills you already know and builds on it and shows you different ways to solve a problem.

Intensified Algebra Bright Spots

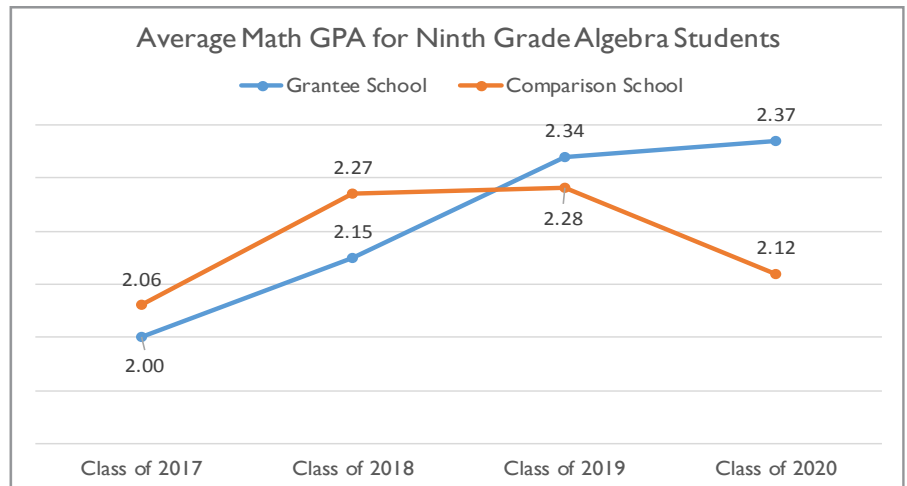
Higher Geometry Pass Rates

Across most ethnicities, the rate of students passing Geometry was roughly the same whether they completed a traditional algebra class or IA. However, Hispanic/Latino IA students had an 8% higher pass rate than their peers who took a traditional algebra class.



Improved Math GPA

The average math GPA for ninth grade Algebra students showed a steady increase over four years and outperformed comparison schools for the Class of 2019 and 2020.



Better Grades

In the second year of implementation, IA students earned a much higher proportion of A's (26%) compared to students taking traditional Algebra (14%).

The comparison group includes a matched set of schools with similar FRL, demographics, and urban/suburban/rural location.

Gains in Non-cognitive Factors for AYD and IA

The Dana Center conducted an analysis to determine whether student learning mindsets predicted scores on the SBMA. On average, the higher the students' rating were on self-efficacy and belonging, the higher their scores on the SBMA. Although it is early, this shows a possible correlation to academic outcomes.