

Mathematics Alignment & Curriculum

Minnesota Principal Academy-Action Learning Project

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Abstract:

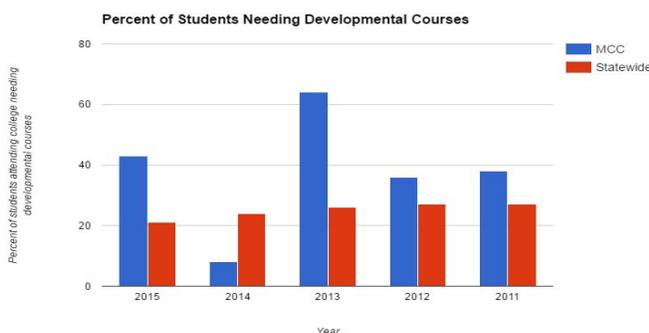
The Action Learning Project evaluated the effects of adjusting the grade level of mathematics course offerings and a change in textbooks had on student learning at Marshall County Central High School. There is a need to improve student learning because over a third of students going onto college have to take developmental courses and the test scores for students are below the state average on the MCA's and below the national average on the ACT. Over the past two years the master schedule has shifted to offer geometry in ninth grade and algebra II in tenth grade. During this time new textbooks were purchased for mathematics in grades three through twelve.

Vision:

Student growth and achievement in mathematics is critical for students to be college and career ready when they graduate from high school. Schools must have clear and effective pathways, expectations, and instruction for students to learn and be proficient in mathematics.

Background/Context:

Marshall County Central High School is a small rural school in Northwest Minnesota. The high school serves 187 students in grades 7-12. We are a two section school, so the majority of the classes split the grades into two sections. We have two mathematics teachers at the high school. One teacher teaches grades 7,8, and 10 and the other teaches grades 9, 11, and 12. With the grades being split classes sizes are anywhere from 13-18, depending on the number in that grade level and the course. Historically the math scores for Marshall County Central High School have been very good in early elementary and then go down as the grades progress.



Why a Change?

Marshall County Central High School students have historically scored below average on state and national assessments. The greatest need for a change is that on average over the past 5 years 37.8% of MCC graduates going onto college have to take a developmental course.

What We Did:

Two years ago the decision was made that we were going to adjust what grade mathematics courses were offered to students at Marshall County Central High School.

2014-15 & Prior

Math 7	Grade 7
Algebra I	Grade 8
Algebra 9	Grade 9
Geometry/Advanced Geo.	Grade 10
Algebra II/Adv. Alg II	Grade 11
Pre-Calculus/Grad Math	Grade 12

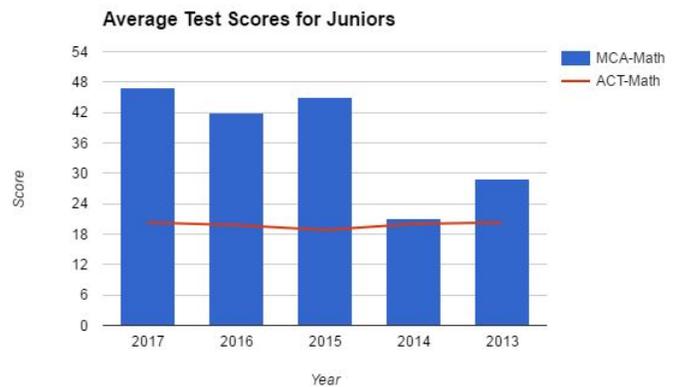
2017-18

Math 7
Algebra I
Geometry/Advanced Geo.
Algebra II/Adv. Algebra II
College Alg/Applied Math
Pre-Calculus/College Alg.

It has been a three year process to adjust the courses and when they are offered. Next school year, 2017-18 will be the first year that all students on on the sequence. This past school year we changed textbooks in our mathematics courses in grades three through twelve, it was a year long process of meeting and reviewing sample textbooks.

What We Found Out:

This past year our juniors average score in mathematics on the ACT and MCA are the highest they have been in the past five years. The ACT scores are very close, however, all students took the ACT in 2016 and 2017. The ACT scores from 2015 and prior are only those students that choose to take the ACT.



Implications For Practice:

More data needs to be gathered because next year's juniors will be the first group of students at Marshall County Central to have completed algebra II in tenth grade prior to taking the ACT and high school MCA. There are many factors that go into test score results, student motivation for testing and how they are feeling emotionally/physically on the test day are just a couple. At Marshall County Central the goal is to prepare students to be college and career ready when they graduate from high school. After next year's MCA results are in it will be interesting to break down the strand data to determine if completing algebra II will result in increased strand scores in algebra. It is my hope that all students will take math their senior year, even though graduation requirements only require three credits. The applied math course is a semester course designed to prepare students to perform well on the accuplacer, so students do not have to pay for developmental math courses in college.

Ultimately, the most important aspect to increasing student learning is to improve instruction. That is where the majority of the focus needs to be for us as administrators and instructional leaders.