

The 2018 passing rate for TUSD's Algebra 1 students on the AzMerit was 29%. Although the Algebra Academy is not the magic bullet to solve all of TUSD's math problems, it may be a game changer for the 35 students who participate in the summer program who will be taking Algebra 1 in Fall of 2019.

As a Natural Science Magnet, Tucson High Magnet School is always seeking ways to integrate the magnet theme into all content areas. Because so much depends on the school's math scores, it is tough to place more responsibility into the math classroom's plate, however, the Algebra Academy has a precedence of integrating the Scientific Method into Algebra lessons that is both organic and effective. The Algebra Academy will train 2 teachers in this cross-content collaboration.

This passed summer teachers received training from Dr. Jen Eli from our Secondary Mathematics Education Program and the University. The training was on the Culturally Responsive practice of Complex Instruction. She also provided literature and an observation instrument on the topic that we used to have teachers reflect on their practice. We plan on training teachers on this same topic in the summer of 2019.

Here is are some words from the founder and program director:

"Here is a little about the benefits to the school and students....

Over the last 11 years, we have offered the program at 9 high schools (1 middle school) through 37 classes and served 921 students.

Evaluation, Research And (Program) Development (ERAD), based out of the UA's College of Agriculture and Life Sciences, provided assessment for the Algebra Academy when we had grant funding that supported assessment. **Participants showed increases and improvements in mathematical self-concept, planning on four years of rigorous high school mathematics courses, confidence in future math performance, and college and career knowledge. A further analysis of the data indicated that when matched by AIMS Math Passing Groups, Algebra Academy participants, on average, performed at .35 of a letter grade higher in their next math course than non-participants regardless of prior AIMS math passing. That year's Algebra Academy participants also showed an average minimal increase (.12) from their 8th grade spring GPA to their 9th grade fall GPA, while non-participants showed a minimal decrease (.03).** Qualitative assessments have also provided insight into the Algebra Academy's impact on instructors' development as mathematics teachers. ERAD presented nationally on this research study as it was one that really worked to find program impact, by matching Algebra Academy participants to participants in another summer program and to non-summer program participants. It is the closest that any of our programs have been put to "scientific" research.

The program recently was sought as a model for a prestigious Agnese Nelms Haury Challenge Grant at The University of Arizona that is seeking to reimagine math and STEM preparation for students in K-12. Selection of grant recipients is highly

competitive. We were excited to see the "Preparing the Next Generation of Native American and Hispanic STEM Inovators" selected to receive \$200,000 in funding for the next three years.

Other benefits that we hope the program experiences is the professional development and employment opportunity for the teachers. While the district hires one, we hire another. We also bring a future mathematics educator (undergraduate student) with hopes of exposing them to the district as a potential future employer. Academic summer engagement of students is always positive. We usually have about 35 students involved in the SUSD Algebra Academy. Each student earns 1.0 unit of high school elective credit. We hope that this helps to maintain enrollment in the district and each student also walks away with a graphing calculator that will serve them through their high school math classes and even into their university level math courses.

Algebra Academy instructors report the program is a great professional development opportunity. We also engage future Math educators who are in the UA's Secondary Mathematics Educators Program. At least 3 of these students have been hired on as Mathematics teachers by a school district that they were exposed to during the Algebra Academy.

Here is a quick fun video of the program... <https://youtu.be/fNJIYjFoyi8>

Please feel free to call or text me if you have any questions. My cell phone number is 520-808-1812. Thanks again for your consideration and advocacy! I'd love to bring this back to Tucson High this summer!!

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