

2021 Summer Algebra Institute Summer Final Report

By Irene Gonzalez-Hererra

Program Needs

In [Humboldt](#) and [Del Norte](#) Counties, 70% and 75% of students in Elementary school, and over half of the students in Secondary Schools are not meeting the minimum standards in academic performance in English Language Arts and Mathematics. The performance gap continues in high school where 53% of students are not meeting minimum proficiency in English Language Arts, 82% of students are not meeting minimum proficiency in math, and 29% to 59% fall far below proficiency in ELA and Math, respectively (CA Department of Education, Smarter Balance Summary Assessment, 11th Grade, 2018-19).

In a national study in 2015, almost nine out of 10 adults (88%) had at least a high school diploma or GED, while nearly one in three adults (33%) held a bachelor's degree or higher. For 2018-19, 12.3% of students in Humboldt County Schools did not earn a high school diploma and 10.6% of students in Del Norte County Schools did not earn a high school diploma. Among those who did graduate from high school, significantly fewer graduates from Del Norte and Humboldt County completed the rigorous course requirements needed for admission into a four-year college in California.

The low educational attainment among families in the area, combined with the high rate of low-skilled employment and poverty rates in the region, lead to an under-valuing of post-secondary education, particularly in regard to careers that require a 4-year degree.

As described above, the intersecting challenges of the downward shifts in the local economy, extreme geographic rural isolation, low degree attainment rates, low college, and career preparation, and high poverty rates have combined to depress the college and career aspirations of local high school graduates.

Emerging evidence shows that the pandemic has negatively affected academic growth, widening pre-existing disparities. In core subjects like math and reading, there are worrisome signs that in some grades students might be falling even further behind pre-pandemic expectations. COVID-19 appears to have deepened the impact of disparities in access and opportunity facing many low-income students in public schools, including technological and other barriers that make it harder to stay engaged in virtual classrooms.

As a result, we were interested in providing summer programming to ensure students in our community continue advancing academically. TRIO Educational Talent Search at Humboldt State University was chosen as a CSU Summer Algebra Institute site for the

summer of 2021 for students who earned a C or better in their most recent math class. We made a commitment to make the program available to students who had earned a D or F and worked with NROC to create a second EdReady account to ensure access for our students with lower math competency and confidence. Thank you to the CSU Office of External Relations and NROC team for making this program possible, and accessible to so many students!

Summer Program Goal: Provide summer opportunities that promote increased academic autonomy, self-efficacy, motivation, and confidence to pursue postsecondary enrollment, as well as enhanced study skills, college and career awareness, financial literacy, and critical thinking skills.

CSU Summer Algebra Institute: Robotics, Math, Arts, & Culture

The **California State University (CSU) Summer Algebra Institute (SAI)** was designed for students in grades 6-12 to get ahead in math and be ready for high school and college! EdReady is an adaptive online application for college math readiness that assesses competency and designs a personalized learning path to fill knowledge gaps. Instructors will use the data reports generated by EdReady through pre-and post-assessment to support class-based learning for success in California Common Core entry-level high school and middle school mathematics courses. The diagnostic will identify specific knowledge gaps for the following competencies:

- a. Data Analysis, Probability, & Statistics
- e. Functions & Their Representations
- b. Decimals, Percent & Absolute Value
- f. Geometry
- c. Exponents, Square Roots, & Scientific Notation
- g. Integers
- d. Fractions
- h. Linear Equations & Inequalities

Science Technology Engineering Art Mathematics (STEAM): The program participants will explore activities that supplement the virtual classroom instruction and reinforce the real-life application of mathematics. Students were provided kits to engage in various STEAM hands-on activities, including but not limited to robotics, coding, traditional basket design, art, etc.

A culturally relevant curriculum encourages students to understand mathematical evolution and its social applications using inclusive historical and cultural references. In addition, contributions in STEAM fields made by diverse groups are recognized. Our

goal is to create a sense of belonging for all individuals in STEAM majors and professional fields.

College knowledge activities support a successful transition from middle school to high school or high school to college. These activities include creating a high school or college planner, high school and college campus engagement, major and career exploration, FAFSA completion, and financial aid awareness.

Humboldt State University facilitated workshops on admissions, financial aid, and a virtual campus tour. Families will be invited to attend the virtual tour event.

Program Outcomes Data EdReady Individualized Learning Platform

Total students participating in EdReady: 75 students

Average Initial Score: 44.12

Average Final EdReady Score: 70.83

Average EdReady Score Increase: 26.97

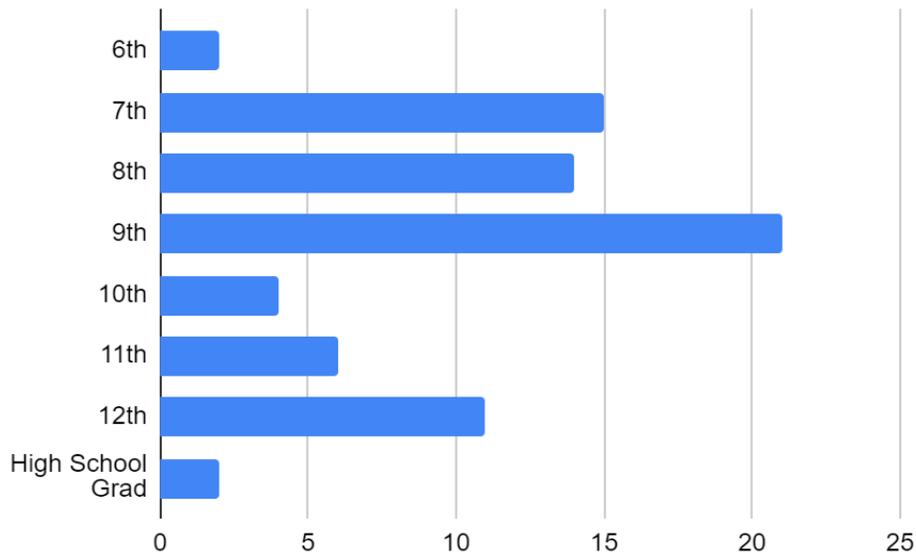
Average Post Diagnostic Score: 54.73

Average Diagnostic Score Increase: 11.22

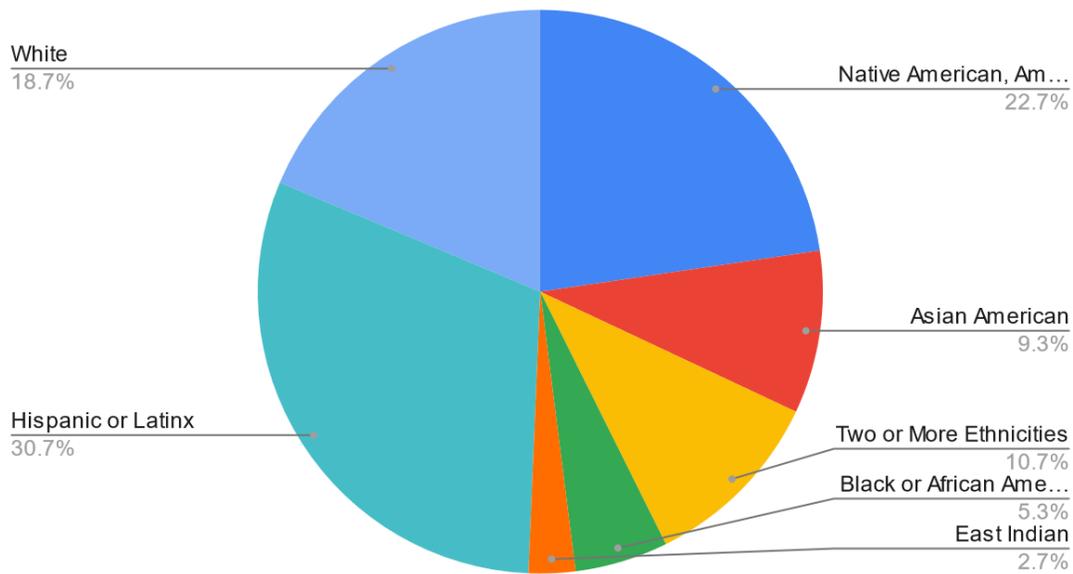
Student Demographics

- I. 75 students
 - A. 61 Students who identified as BIPOC ~ 81.3%
- II. 100% Virtual programming
- III. Ethnic and grade level breakdown of attendees (Refer to Graphs 1 and 2)

Graph 1: Grade Level



SAI Student Ethnicity



Student voices: What was your favorite part of the program?

- "My favorite part of the program was the art projects and learning about different cultures. I also think the people in the program made it more special."
- "Kindness and trying to engage with everyone, no matter who/what or where they are at."
- "I liked the teachers/assistants, felt welcomed. Teaching was good. The activities we did were fun. Overall, it was a great experience."

- "I loved that the teacher was very friendly and his way of teaching was very informative."
- "The art was my favorite part."
- "Meeting new people."
- "The robot."

Staff said:

"They showed up for the robot and stayed for the math" - 2021 CSU SAI Program Coordinator Sam Diel

"EdReady's color coded system allowed me to engage even the most reluctant learners to make gains in math. It was amazing to see the growth and engagement during the summer" - Teacher's Assistant Kevin Chung

"I felt the kids truly gained a lot of knowledge in Math, culture, arts, college, life skills and robotics. I know my kids learned a lot from my math lessons and also from Edready. Thank you for the opportunity to be a part of this program. I have taught many summer school sessions over my career, and this was by far the best one." Tat Lam, High School Math Instructor

"The program supplies boxes were also AMAZING. Receiving them was like Christmas for our students. There are so many amazing moments that happen organically. All the TA's were so professional and committed. We emphasized a growth mindset to create that as the center of our virtual learning environment." Maggie Peters, Middle School Math Instructor and TA Mentor Lead

After a year of COVID pandemic and remote teaching, I enjoyed giving meaningful instruction remotely and the opportunity for students to receive summer school credit with a strong refresher and preparation for Algebra skills. I am happy with the high level of connections that were created interacting with such a diverse group of students. I think this summer course helped ensure that instruction was accessible and opportunities were equitable for our students in the surrounding counties. Sammy Quezada, Middle School Math Instructor