Play. Code. Create

KOOV

Title I
Socioeconomic Programs
KOOV Case Study

Ralph A. Gates
Bluebonnet Elementary
Acton Agua Dulce Elementary
United North Elementary
JW Webb Elementary
Nichols Elementary School
Stony Brook Elementary School
Olympia South Elementary School
Phillips Magnet Elementary School
FDR Elementary
Billy Mitchell Elementary School
Barrio Logan College Institute
Manzanita Elementary
Black and Latino Coalition

WRITTEN BY:
Susan Gentz,
Vice-President, K20Connect

DATE:
March 2020

Background

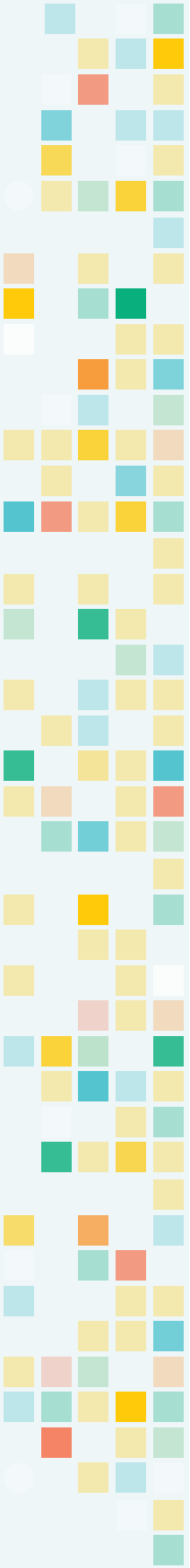
Over the course of the KOOV pilot, twelve Title I schools and three socioeconomic programs implemented the product into their classrooms in various ways.

All of the KOOV participants were asked to observe the students' experiences and give their own thoughts with KOOV, and at the end of the program provide feedback via a survey and an exit interview.

Sony Electronics began the KOOV Pilot Program to gain insights and feedback from educators as they look to bring KOOV to the United States.

Pilot Program Participants

The implementers of the KOOV pilot for these programs were Alicia Greenway, Rolando Anchia, Nicole Hauptman Chun, Vanessa Witherell, Kerrie Beavers, Jill Tomkins, Susan Hammill, Vanessa Tibbs, Jen Ellison, Nadia Guajardo and Ryan Cowan, Courtney Gillette and Katie Nielsen, Samantha Nieman, Andrew Buitron, Jessica Carter, and Carol Melton.



KOOV

Engaging Students in STEM

Access and equity for all are words often used to describe the desired state for education in the United States. When the Elementary and Secondary Education Act was enacted in 1965, the main purpose of the law was to provide funding and support for schools that needed additional funding. With this funding in place, it was now up to leaders of these schools to provide equitable opportunities for every student.

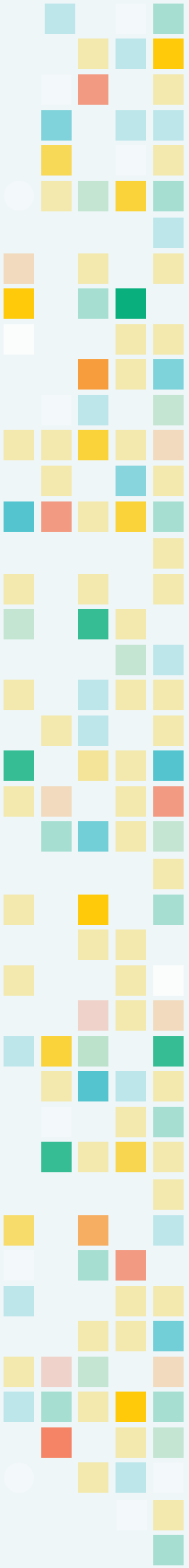
Fast forward to 2020, there are now new and innovative ways district leaders and educators can provide equitable opportunities, especially when it comes to STEM and preparing students for the future. **One way to ensure every student is introduced to the STEM field is to create an exclusive STEM program.** Many schools have after school programs or other options, but for some students this means they might not ever actually be exposed to STEM curriculum. Intentionality is critical when it comes to ensuring equity in STEM.

Introduce STEM Early

Title 1 schools and socioeconomic programs can also excite students in STEM by introducing programs at a young age. The Early Childhood STEM working group found that, "While not enough longitudinal research exists to track the effects of early experiences in each of the STEM disciplines, several studies have shown that **children's mathematics achievement at kindergarten entry predicts later math and literacy achievement** even more than early literacy ability does."

The working group also shared that, "Research has found that children from different socio-economic circumstances enter kindergarten with large differences in math and science knowledge, and that these differences tend to persist—even grow—over time. However, these differences can be ameliorated through school and home experiences that promote disciplinary talk, teach foundational concepts, skills, and practices, and develop confidence, interest, and other positive dispositions about STEM." **Intentional inclusion of STEM at early ages is proving to close knowledge gaps and be an early indicator of achievement.**

When thinking about STEM programs or curriculum, it is easy to think it is best for older grade levels. The pilot program showed, however, that it is not only doable to implement STEM concepts at a young age, but that it can also be done without difficult challenges. Along with age, concerns about diversity are prevalent as well. Andrew Buitron found that, "KOOV can be used for people of color and different backgrounds... no barrier to entry," and that **"There is no language barrier for English learner students as visual diagrams lead students to understand each step."** Every educator deserves support for implementing such important learning concepts for every student to ensure success after graduation.

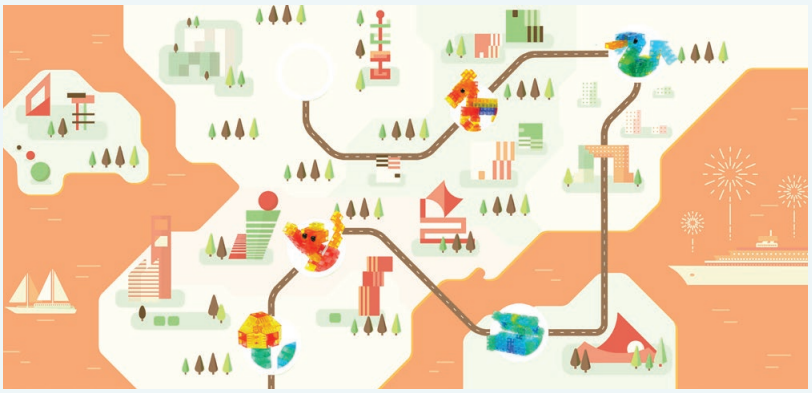


KOOV

Explaining Why STEM Matters

Another way of engaging students in Title 1 schools and socioeconomic programs is to help them understand how STEM will impact life after school. According to the U.S Conference of Mayors, **"In the immediate future, employment in STEM based occupations will grow 70% faster than employment in other occupations."** And, "Since WWII, 50% of U.S. economic growth has been due to scientific and technological innovation." These statistics are significant, and many studies have found that students entering higher education lack the academic background to pursue advanced degrees in STEM fields.

Many of these occupations are rooted deeply in the ability to problem solve and collaborate in innovative ways. Alicia Greenway of Ralph A. Gates Elementary School noted that KOOV is, "A great program because it taught the kids problem solving and how to work with other people." **These schools and programs must have a partner like KOOV to come alongside them and show students why STEM matters and prepare them to enter an ever-changing workforce that is dependent on the skills KOOV helps develop**.

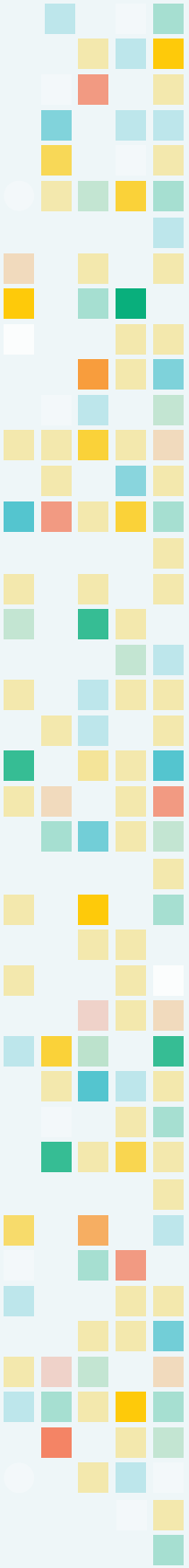


KOOV

Make it Safe to Fail

STEM programs and curriculum create an environment where students are allowed to fail. KOOV specifically provides this, and Alicia Greenway at Ralph A. Gates Elementary School stated that when using KOOV, **"There was no fear of making mistakes. If a mistake happened, they took it apart and started over. They helped each other to fix the problems they encountered. It definitely helped build their self-esteem and confidence levels."** Every student should have a safe place to start over if that's what they need to do. Educators often talk about the need for grit and perseverance in students. Giving them programs and tools that allow them to fail and learn how to adapt is critical for building these skills.

KOOV also makes learning complex concepts easy. Kerrie Beavers of JW Webb Elementary School found that, "Ordinarily it's really hard for [students] to follow instructions, but the diagrams on the app and how you are able to manipulate them were super helpful for the kids." Students will stay engaged in a place where they feel safe to feel and understand the instructions given to them. Engagement in coding and robotics is key to building up a generation prepared to take on the challenges of tomorrow. Carol Melton of the Black and Latino Coalition stated that, **"I really liked the engagement of all the senses. I would love to be able to use this every day."** This type of engagement is what will lead the nation in the coming years and decades.



KOOV

Looking to the Future

Research from the National Center for Children in Poverty shows that, "Social and economic deprivation during childhood and adolescence can have a lasting effect on individuals, making it difficult for children who grow up in low-income families to escape poverty when they become adults." In order to break this cycle, students in Title I schools and socioeconomic programs must have programming that prepares them for further education or a career straight out of high school. **KOOV stands ready to prepare these students for successful futures.**

IN COLLABORATION WITH

KOOV