Play. Code. Create

KOOV

STEM/Charter Schools KOOV Case Study

Saint Jeanne de Lestonnac, Temecula, CA

Vails Gate STEAM, New Windsor, NY

St. John Paul STEM, Burbank, CA

Casita Center K-4, San Diego, CA

Buckley School NYC, Manhattan, NY

Palm Valley School, Rancho Mirage, CA

Trinity School for Children, Tampa, FL

Cornerstone Prep Denver, Memphis, TN

WRITTEN BY:

Susan Gentz,

Vice-President, K20Connect

DATE:

March 2020

Background

These STEM and Charter Schools all received KOOV prototype kits to use in their classrooms. Over the pilot program period, all the schools had different group sizes and implementation uses for KOOV. This paper is a comprehensive look at how STEM-specific schools and charters with more flexibility incorporated this product into their teaching of coding & robotics.

The 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 implemented the KOOV Pilot Program to capture insights and feedback from educators as they look to bring KOOV to the United States.

Pilot Program Participants

Ryan Kleinvachter, Saint Jeanne de Lestonnac
Janet DeStefano, Vails Gate STEAM
Bridget Higgins, St. John Paul STEM
Jenny Chien, Casita Center K-4
Willie Dominguez, Buckley School NYC
Grant Kisling, Palm Valley School
Amanda MacDonald, Trinity School for Children
Natasha Langford, Cornerstone Prep Denver

KOOV

The Right Programming for Coding & Robotics in a STEM and Flexible Environment

STEM and charter schools are often viewed as educational institutions that are doing all the right things for students when it comes to preparing them for life after graduation. While they have a great deal of flexibility, and often visionary leadership, **they still need the tools and programming to support desired educational outcomes.** Even a school devoted completely to these concepts still has challenges and barriers to overcome. They include breaking down learning silos, creating and maintaining student interest in STEM-related subjects, etc.

Breaking Down Learning Silos

KOOV allows daunting tasks such as teaching young students coding and robotics to be broken down into tangible steps for students. Julie King, the Director of Educational Technology at Buckley School NYC found that, **"The freedom to be able to separate the building with the pieces from the coding was fantastic for 2nd grade because the kids didn't get overwhelmed."**

KOOV

continued.

Students and educators alike often get overwhelmed with STEM disciplines. **The real idea of STEM is the idea that silos are broken down between subjects and context is provided for real-world situations.** The Buckley School took the KOOV tool and integrated it into a science curriculum. Julie King notes that, "I think there are connections anywhere you can find them. You can use them with social studies, and you could have the students create a London Bridge. If you created a London Bridge in 2018, what would it look like? How would it change? For math, there are endless extensions for math. Even for language arts, it would be really neat to connect when they are looking at parts of grammar. Let's say the blue are verbs and the red are nouns and the yellow are adjectives. Code a sentence... I think there are connections literally across the curriculum that way." **Connecting coding and robotics to any problem is the direction every school should be moving in to increase interest and skills for the future workforce.** KOOV is equipped to provide the support needed to prepare educators to teach complex but critical concepts and break them down for students to easily understand.

Janet DeStefano of Vails Gate STEAM Academy also added that, "We have STEAM Fridays and the students could definitely use KOOV as project-based learning. We also have Chromebooks, and this would make it very easy for the students to complete the learning courses and follow the 3D models." The integration of KOOV across the school makes it an essential tool for breaking down the silos.

Cross-curricular learning is the pathway to innovative problem solving. This type of learning can only happen by bringing robotics and coding into all areas of study.

KOOV

Creating and Maintaining Student Interest in STEM

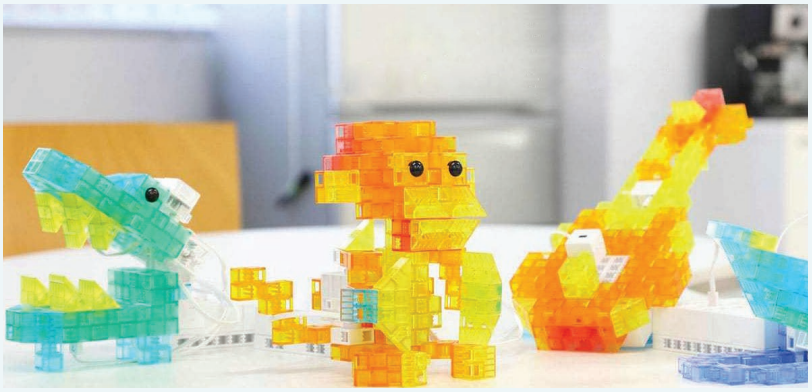
The earlier schools introduce STEM concepts, the more likely they are to stick to it. Bridget Higgins of St. John Paul's STEM Academy **observed that KOOV was, "A really exciting and fun way to show middle school students a taste of stem education that was fun, engaging, and getting them committed to a longer-term STEM education."**

From 2017 to 2018, Junior Achievement found a significant drop in teenaged boys who want a STEM career, down from 36 percent to 24 percent. And the low level of interest among teenaged girls remained unchanged at 11 percent year-over-year. Ensuring the right tools are being deployed to increase interest in STEM is an important piece to raising these numbers; taking for example, St. John Paul's STEM Academy, that applied KOOV as a recruiting tool for getting students interested in it.

These statistics identify the urgent need for STEM and charter schools to be the driving force in engaging students to pursue STEM pathways. KOOV pilot participants identified over and over again how much students love working with the blocks and coding. This is the kind of engagement that is necessary for students to find a love and passion for coding and robotics.

KOOV

continued.



Vails Gate STEAM Academy stated their interest was specifically in the involvement of learning courses on the computer, building and then coding to have the robots move. **"The whole process fits perfectly into our STEAM Engineering Model."**

Engagement that fits every style of learning is critical to ensure students are prepared to move on to whatever their next phase of life is. **KOOV is the tool that creates engagement, maintains interest, and prepares students for their future.** STEM and charter schools must take advantage of the flexibility and focus they have in order to provide these opportunities for every student.

K20CONNECT

KOOV