KOOV

KOOV Case Study:

Sweetwater Union High School District
KOOV Pilot Program

BY:

Jeff Carlin
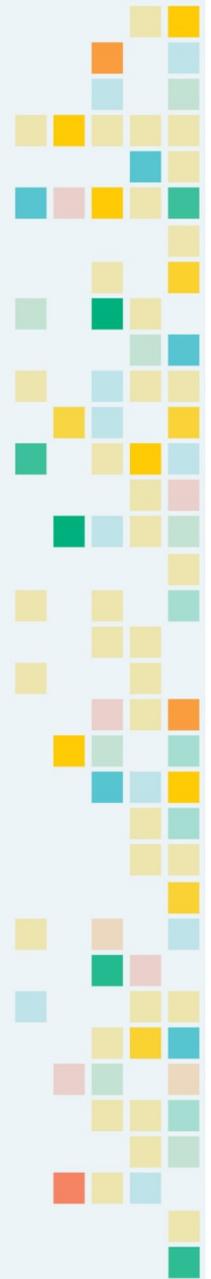
TITLE:

Marketing Manager

ORGANIZATION:

Sony Electronics

DATE:

12, December, 2017

Background:

The Sweetwater Union High School District in Chula Vista, CA received four KOOV prototype kits from Oct 3, 2017 to December 1, 2017 in order to participate in the KOOV Pilot Program. Educators from five different schools within the school district used the kits for two weeks at a time. They introduced KOOV into their schools and provided students an opportunity to use KOOV for independent study or within a structured setting lead by an educator.

Educators were asked to observe the students' experiences 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:

Bonita Vista Middle School

Chula Vista Middle School

Rancho del Rey Middle School

San Ysidro High School

Sweetwater Union High School

KOOV

What about KOOV made you become interested in testing it out?

The specific reasons for trying out KOOV varied from site to site but the overarching theme from the educators was that KOOV was a new and exciting way to introduce robotics and coding to students with a hands on experience.

"The hands on experience, and the kids get to put things they have learned in the classroom into practical use."

- James Bogart from Rancho del Ray Middle School

"My ELD students rarely have an opportunity to try something relating to robotics, and also I hoped it would be a great teaching tool for ELD students to follow directions and have an end product."

- Miriam Rachelson from San Ysidro High School

Another characteristic that appealed to the educators was the collaboration and problem solving skills that KOOV presents to students.

"I teach AP Computer Science Principles, and I thought this would be a perfect activity my students can work on that involves team work, problem solving, and programming."

- Maricruz Rosete from San Ysidro High School

In addition, the fact that KOOV is made by Sony stood out to some and provided an instant credibility in their eyes.

"The first thing that caught my attention was that Koov was being backed by Sony. Sony has a reputation for being a leader in electronics. I immediately thought to myself, "this must be good.""

- Alex Picazo from Rancho del Rey Middle School

## How did you incorporate KOOV into your classroom or program?

Once each school's pilot program contact received the KOOV kits, it was up to them to get the word out about KOOV's availability for use at their schools to teachers and students. Most advertised on campus with flyers, emails, made announcements, and had teachers sign up their classes.

The pilot program set no restrictions on how KOOV was to be used, so educators could choose to use it for independent study or in a structured class setting. Most schools used KOOV in both types of settings with classroom sizes ranging from five students all the way up to 35. The larger classrooms put students into teams of three to five students with some educators assigning specific roles for each student on the team.

Getting students started did not take a lot of time as some educators reviewed the KOOV App with their students while others let kids dive right in.

"The first day required the most amount of time. I had to teach students how to locate and identify the KOOV icon, how to login, what character to choose, and review the options available to them: Robot Recipes or Learning Course."

- Alex Picazo from Rancho del Rey Middle School
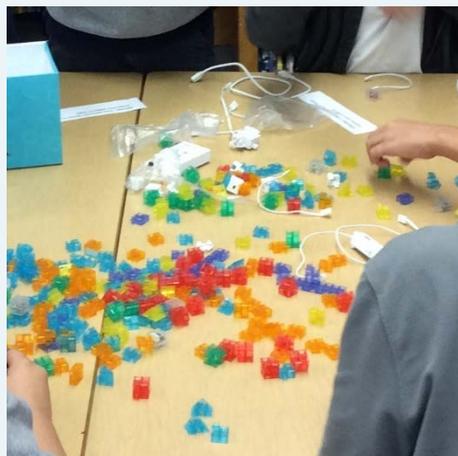
"(We showed them) how to access the program on the computer, but students did most of the exploration themselves."

- Maricruz Rosete from San Ysidro High School

Once students started building and coding, and questions did arise, students were self-sufficient and able to problem solve within their groups or by taking their time using the KOOV App.

"Students did not need help as everything was clearly explained to them in the recipes. The recipes do an amazing job at guiding students through the process from beginning to end."

- Alex Picazo from Rancho del Rey Middle School

"They worked together and were determined to figure out how to do it themselves."

- Maricruz Rosete from San Ysidro High School

Did KOOV help you solve some of the challenges you had?

Many of the schools in the pilot program did not have existing robotics or coding courses within their curriculum, so educators and students found KOOV to be a fresh new experience to introduce both disciplines into the classroom. The ease to implement KOOV into the classroom stood out to some of the educators.

"It's a pre-packaged project, teacher just facilitates. Students work at their own pace, interactive instructions. I like that there's a code provided, but then students can modify and manipulate."

- Kim Morris from San Ysidro High School

Other educators liked the skills that KOOV introduced to the students like problem solving, working as a team, and attention to detail.
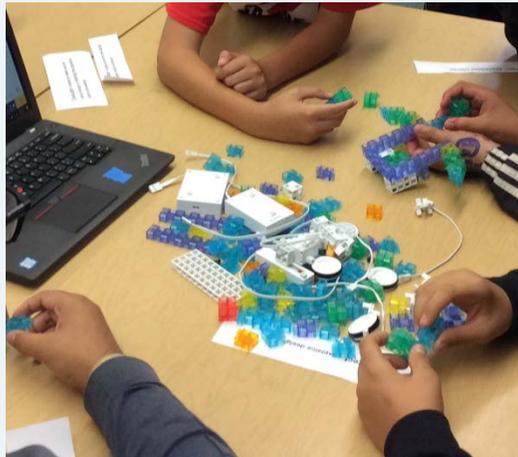
KOOV

"We did have to really teach the kids to focus on every detail which was important and a real-life experience. One wrong connection meant everything was off."

- Stephanie Hubner from Chula Vista Middle School

While the students felt that KOOV could have helped them in their current studies.

"Some students in my AP CS A course felt they would have benefited from KOOV while taking AP CS Principles."

- Sara Kazemi from Sweetwater Union High School

What did you like about KOOV?

When it came to what they liked best about KOOV, the teachers gave a wide range of answers. Some teachers touched on the ease of use and how user-friendly the KOOV App is, especially for beginners.

"(The app was) very visual and it helped that students could see what they were building in 3D."

- Maricruz Rosete from San Ysidro High School

"The directions and information were in language they understood and could read."

- James Bogart from Rancho del Rey Middle School

While others mentioned the creativity KOOV promotes, how engaging it was, and that it is a tool for teaching teamwork and collaboration.

"Watching the kids create, evaluate and work together."

- Stephanie Hubner from Chula Vista Middle School

"It was a wonderful tool for team work."

- Gabriela Padilla from San Ysidro High School

"It was self-guided and because they (the students) were doing it collaboratively, other kids would step up and problem solve, trouble shoot"

- Dawn Castillo from Rancho del Rey Middle School

KOOV
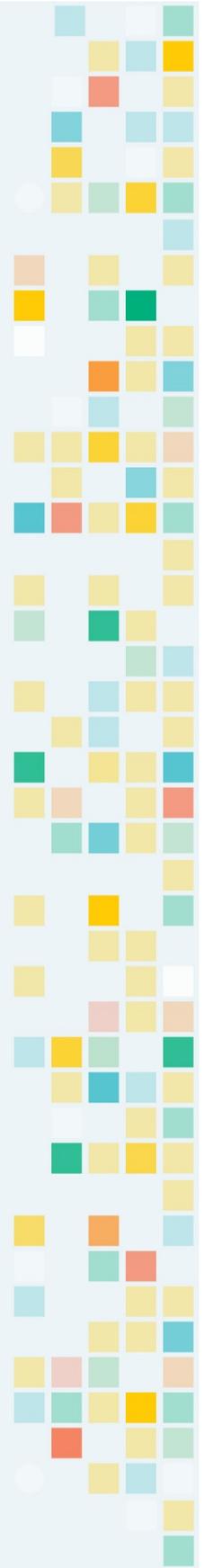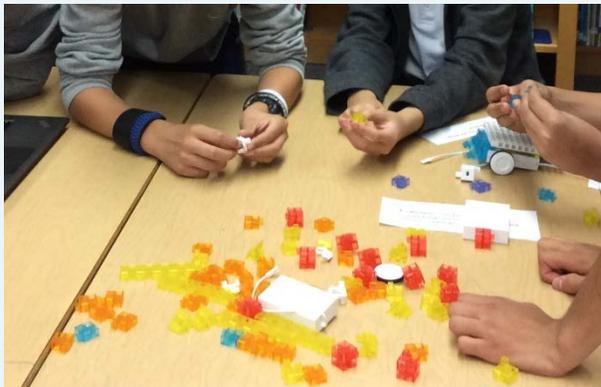
The blocks were also considered a strong point for the teachers as they felt the blocks were easy to put together, colorful, and different in a "good way" from other building blocks on the market.

"The pieces are easy to assemble and are a good size."
- Terry Funk from Bonita Vista Middle School

For students with experience in coding and robotics, KOOV provides another tool to hone their skills.

"Given that all of my students were currently enrolled in an AP Computer Science Principles class, they got to experience one way coding can be used for."
- Maricruz Rosete from San Ysidro High School

What challenges did you have to overcome?

One of the main challenges that multiple educators mentioned was keeping track of all the small pieces that come in the kit. Each kit comes with 300+ parts, so it was a pain point for many to keep things organized. The packaging of the demo units was another pain point for teachers, but Sony is addressing that with a single box packaging solution for KOOV's final release.

"It was a bit of a challenge to put pieces back into the correct box. Each kit contained two boxes. There were no pictures to identify where each piece was supposed to go."
- Alex Picazo from Rancho del Rey Middle School

KOOV
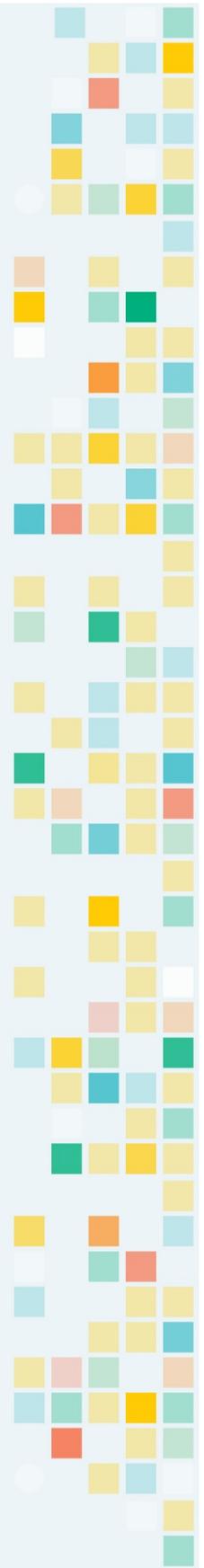
Time restraints was another common challenge for the teachers as they found that it took more time than expected to finish one project. Due to this, the teachers had to find storage solutions for the incomplete projects that their students were working on so that they could continue where they had left off.

"We met after school which interfered with other activities, so some students could only attend one day. Each robot/code takes more than one day - likely 3 days."
-   Terry Funk from Bonita Vista Middle School

Another comment brought up from one of the educators was that they would really like Sony to develop some lessons for the app's Learning Course that is not dependent on using kit pieces.

"The only thing I would address are the learning courses. I would suggest you have courses that do not require access to the kits."
-   Alex Picazo from Rancho del Rey Middle School

While observing students using KOOV, what stood out? What did they like? What challenged them?

A very reassuring sign for the educators was observing their students using KOOV and the reactions they had. There seemed to be a lot of excitement and a sense of accomplishment when the students completed a project.

"It was not so much as the comments as the expressions on their faces after building a robot. I saw them develop confidence, a great sense of accomplishment and plenty of smiles on their faces."
-   Alex Picazo from Rancho del Rey Middle School
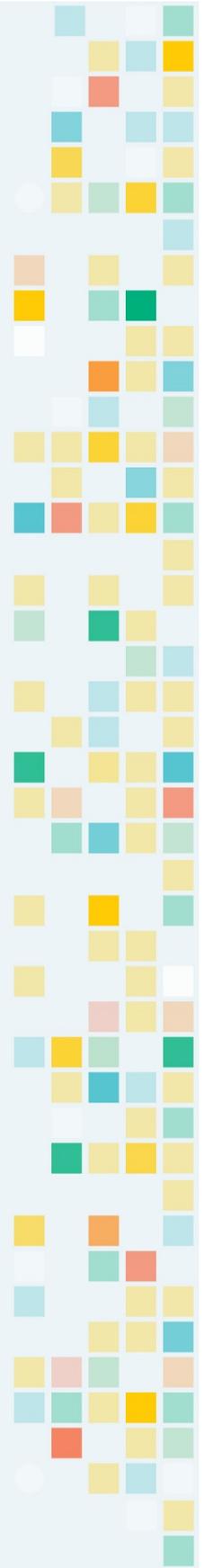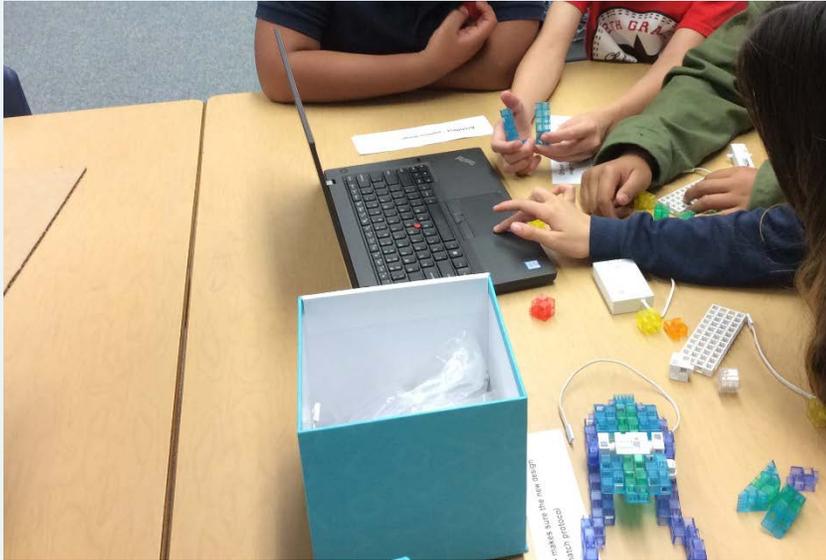
KOOV

"The excitement and full hands on experience was amazing to watch. The look on their faces when they connected it and sent the code for the robots to move was wonderful. They were very proud of their work."

- Gabriela Padilla from San Ysidro High School

The students seemed to like how easy it was to use KOOV, their ability to work in teams towards a common goal, that they were able to be hands on with building and coding, and how much fun they had trying something new.

"Students liked how easy it was to build a robot by following the recipe. I know they had a blast coding the robot and watch it move."

- Alex Picazo from Rancho del Rey Middle School

"The interpersonal aspect of the project, the level of difficulty, the colors, the program, the end product."

- Stephanie Hubner from Chula Vista Middle School

KOOV

"...fun, easy, was hands on but also could code it to do things; produce a unique design, problem solving, collaborating..."
- Dawn Castillo from Rancho del Rey Middle School

Feedback from the educators on what challenged the students mostly consisted that students felt they did not have enough time for the project. This also echoes what the educators said regarding time restraints and that projects took longer than expected.

Students were also challenged by the design of the KOOV pieces, and how the pieces forced them to think in 3D and develop spatial awareness. With that came some frustration as the attention to detail that KOOV demands requires some patience.

"Students are used to instant gratification. Koov teaches students patience team work. Students had to pause often to pick up the right materials and converse with their team mates about the best step to take."
- Alex Picazo from Rancho del Rey Middle School

"Sometimes they were frustrated, but overall they had fun."
- Miriam Rachelson from San Ysidro High School
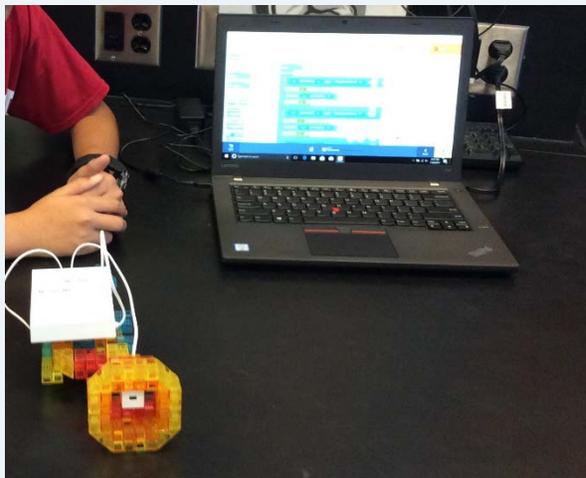
Would you recommend KOOV to others?

After the pilot program, the educators seemed to overwhelmingly recommend KOOV to other teachers, librarians, Maker Space coordinators, and STEAM leaders. A driving force for many of the recommendations was KOOV's ease of use for teachers and students alike. The teachers especially liked how easy it was for the students to figure things out on their own using the tools in the app.

"I liked how easy it is to use. The software is completely user-friendly. It is very hard for students to get lost. The recipes do a good job at breaking down each process step by step."
- Alex Picazo from Rancho del Rey Middle School

"KOOV was very easy to use... I would definitely recommended."
- Maricruz Rosete from San Ysidro High School

Another area that multiple educators touched on was the fun they saw their students having while using KOOV and how engaged they were while using it.

"The excitement and full hands on experience was amazing to watch. The look on their faces when they connected it and sent the code for the robots to move was wonderful. They were very proud of their work."
- Gabriela Padilla from San Ysidro High School
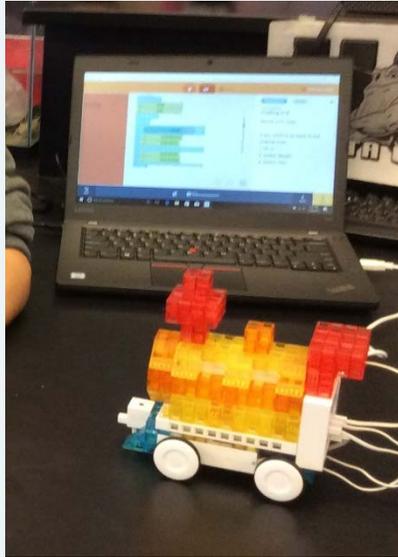
KOOV

Conclusion:

Overall, the Sweetwater Union High School District students and educators left with a good impression on KOOV and look forward to seeing how the finished product turns out. The educators also stated a strong interest in purchasing units for continue use within their classrooms once KOOV is available.

Sony will take the feedback received from the Sweetwater Union High School District and will work with their product engineeers to fine tune KOOV to fit the demand and needs of educators. This type of feedback is paramount to the Sony team as they look to make KOOV the best robotics and coding solution for the classroom.

KOOV