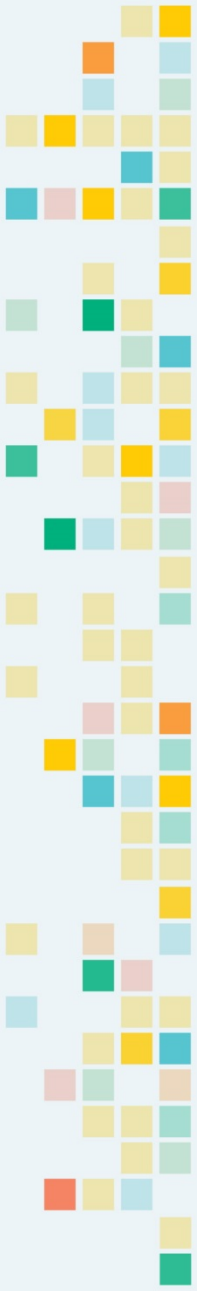

# KOOV Case Study:

## The Classical Academy, Escondido TK-8

## KOOV Pilot Program


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## Background:

The Classical Academy serving TK-8 in Escondido, CA received six KOOV prototype kits from February 5, 2018 to March 19, 2018 in order to participate in the KOOV Pilot Program. Over the eight weeks, Chris Segina incorporated KOOV into his fourth and fifth grade coding classrooms, and used KOOV in a structured setting where he lead students as they used KOOV.

Chris was 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:

Chris Segina – Teacher at The Classical Academy, Escondido TK-8

KOOV

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

"I heard about the pilot program from a colleague and decided to pursue it for my coding class."

Chris mentioned that KOOV's interactive lessons and the step by step animated instructions really stood out to him from the start. He liked the idea that his students could share their projects with KOOV users throughout the world and vice versa. Chris also made the point that he felt his students would have a familiarity with the coding portion of KOOV based on their prior studies.

"The block-based coding was similar to what my students were already learning on code.org and Scratch."

Another very important point for Chris was that he liked how students had to be hands-on with the building of the robots and that KOOV uses less screen time than other coding programs.

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

Once Chris received the KOOV kits, it was up to him to decide how he wanted to incorporate KOOV into his fourth and fifth grade coding classes.

"I used KOOV in my pre-existing coding class. What I did was take students who had finished their lessons from code.org and needed something else to do, so I let them use KOOV."

The pilot program sets no restrictions on how KOOV is to be used, so educators can choose to use it for independent study or in a structured class setting. Chris decided to use it in a structured setting with classes ranging from 19 to 24 students. Students that finished their lessons were put into groups of two to four and used KOOV for the remainder of class. Chris' classes are one day out of the week for an hour and 15 minutes at a time.

KOOV

"We shared the KOOV kits and worked in small groups. We had students working in groups of 2, 3 and 4... They took turns switching from different roles within their team."

Due to time constraints and how his class was structured, Chris had his students focus on the Robot Recipes section within the KOOV App where students could build pre-designed, pre-coded robots using step by step instructions. The Parrot and the Treasure Box were the students' favorite recipes to build.

Because KOOV uses Scratch based coding, Chris' students felt right at home with KOOV straight out of the box while still being challenged with trying something new.

"One of my favorite things was as soon as the students opened it, they said "Oh, this is just like Scratch," and they instantly just started doing stuff."

This also made it easier for Chris as he did not need to give his students a lot of instruction on getting started.

"It was so easy to use and intuitive. The app made sense to them... I didn't even have to tell them how to use the touchscreen. They were able to flip things, zoom in and pause. I felt like I was watching a spy movie."

Having now used KOOV, Chris says he would have changed the way he implemented it into his class by structuring more class time around using KOOV specifically.

"Now that I know how KOOV works, if I redid a class, I could easily base it on KOOV versus just using it after students finished their lessons."

Chris also mentioned that if he could go back and structure his class around KOOV, he would have liked to use the KOOV App's Learning Course section with his students.

"I would have definitely used the Learning Course. It would be a great way to start your class off and once they finished a lesson, reward them with free time to build from a recipe or from scratch."

KOOV

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

Unlike many of the schools that have been involved in the KOOV Pilot Program, The Classical Academy already had an established coding curriculum, so Chris' students had experience with coding. But one area that Chris was looking for a solution was finding a way to get his students to stare less at a screen while still using their coding skills.

"The whole screen time thing is so overdone. I don't care if it is in school, at home, or at Grandma's house, everyone is on tablet, phone, or computer, and it's sad. I want the kids to have technology, but they need to have the motor skills, using their hands, and develop dexterity...

"I feel a main reason kids are so rough with things is that they just don't do enough things with their hand... KOOV forced them to use their hands and gets their eyes away from the screen... KOOV fits in with everything that I want when it comes to technology but with less screen time."

KOOV's combination of digital coding with physical building really checked the box for Chris in finding a way to develop key skills that student would not get simply on a computer.

Another area that Chris saw KOOV really help out was getting his female students involved in coding and robotics. KOOV was intentionally designed to be inclusive to both boys and girls, and Chris definitely noticed that with how his class used KOOV. He enjoyed seeing his female students not only getting involved in computer science, but also outpacing his male students.

"Something that is very frustrating for me is the perception that computer science was for boys... The boys in my class wanted to make an all-boys team and it was great to see the all-girls team done and playing with their finished robot while the boys were still arguing on Step 5. It was amazing!"

KOOV

## What did you like about KOOV?

On top of what was mentioned in the previous sections, when it came to what Chris liked best about KOOV, he pointed out how it kept his students entertained and engaged.

KOOV's self-pacing approach was also a strong point that stood out to Chris as one of the main reasons his students stayed engaged as they could progress at their own speed.

"Students could go ahead. They didn't have to sit and wait for other students before moving to the next step. You see it in the classroom all the time where you have 20 students, and there are two kids that could be a distraction which affects all the kids in the classroom. With how KOOV works, those two kids can sit on Step 3 all day while the rest of the class can still finish building their robots and test out their code."

Chris also liked the KOOV App as he found the app to be well designed and easy to pick up. This let him take a hands-off approach with his students by allowing them to figure things out on their own.

"The app is well done and students were able to work without much help."

Another thing that Chris enjoyed was some of the intra and interpersonal skills that KOOV introduced to his students like: troubleshooting, critical thinking, collaboration, teamwork, and patience.

"Working in small groups the students learned to take turns and help each other check projects for errors."

## *What challenges did you have to overcome?*

For Chris, one of the biggest challenges was finding a way to fit KOOV into his existing class schedule and the time restraints that caused. Because his curriculum was set well before he knew about the KOOV Pilot Program, Chris had to find a way to fit KOOV in that made sense.

"Now that I have used it in my classroom there are some things I would change but it is mostly my class' schedule and structure."

Those time restraints made it tough for Chris to explore certain features within the app like the Learning Course or Free Production. Both features are things Chris felt he could easily incorporate into his classroom if he had the time to fully plan on using KOOV when he developed his class' curriculum.

Because Chris used a beta version of the KOOV App, there were some technical issues especially in regards to language translation as well as getting the app to work on certain systems.

"The technical support just wasn't there yet and the language barrier was difficult. We had multiple computers that we never did get the app to work on. My guess is this will not be an issue in the future."

These concerns were provided to Sony's app designers and were address in time for the release of KOOV.

KOOV

Another challenge for Chris was the packaging of the demo units. Each set included two boxes of parts. With each kit coming with 300+ parts, it was a challenge to find certain parts amongst the two boxes and to keep things organized.

"It would save time and keep it better organized if there was a bin that had small storage spots for the blocks."

Sony is addressing this pain point with a single box package for KOOV's final release as well as developing an optional classroom storage solution.

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

The students focused on building robots in the Robot Recipes section. Chris said they really enjoyed making the robots come to life and modifying the code so they did something completely different. That KOOV uses Scratch based coding, the students felt right at home with the KOOV's coding environment.

"A lot of students noticed how similar it was to Scratch and code.org."

Chris also noticed the sense of accomplishment he saw in his students after they built a robot and got it to move.

"There were lots of happy students when they got to see their completed object come to life with the coding. They immediately named the parrot when they finished it and started talking to it. It was a lot of fun to see them so excited."

KOOV

Another interesting thing that stood out to Chris was over hearing his students mention how using KOOV related to their studies in other classes.

"I heard a student or two mention having done something similar in math class when they were discussing angles and degrees used in the coding of the servo motor."

When it came to challenges, Chris mentioned that the biggest challenge his students faced was trying to figure out what code to modify in the Robot Recipes to make the robots do what they wanted. He also pointed out that there was a frustration from his students when they had to go back and fix a mistake from a previous step.

"Kids do not like to read instructions... They had to learn that you cannot just start cramming stuff together. If you don't build it right, it just won't work. The KOOV makes them go back and read the instructions as there is no other option, and the kids need that."

Another sticking point for students was getting use to the KOOV blocks that are different from what they were used to using.

"Some of my students were used to popping the blocks apart based on their experience with other building blocks. They weren't use to pulling them apart."

Overall, the students thoroughly enjoyed using KOOV and wanted to continue using it even after the pilot program.

## *Would you recommend KOOV to others?*

After the pilot program, Chris said he would strongly recommend KOOV for educators looking for a turnkey solution for introducing coding and robotics into their classroom.

"For a school, I would totally recommend it... KOOV makes it easy for anyone to offer robotics and coding. The software is well designed and students didn't need much help progressing through their builds. Someone with limited knowledge of coding and robotics could still run a class or program with KOOV."

He also felt it would be perfect for homeschoolers due to the ease of use of the KOOV App.

"KOOV seems like it would be a great option for homeschooling families or parents who want to offer additional coding and robotics but have little experience with it."

## Conclusion:

Overall, Chris and his students left with a great impression on KOOV. He mentioned wanting to purchase units, but his funding is limited and is a hurdle that he would have to overcome.

Sony will take the feedback received and will work with their product engineers 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.