

## WHITEPAPER

# Virtual Learning with Vidcode



### Introduction

In September 2020, Vidcode partnered with WestEd to conduct a rigorous US Department of Education backed study of Vidcode's platform and curriculum in a remote learning environment. The study was run with two middle school teachers in a virtual class setting. The 2 teachers in the study spent three weeks on Vidcode material and a total of 97 students participated.

Teachers completed JavaScript 101 with their classes, starting with drag-and-drop blocks and moving on to writing their own code as the lessons progressed. Teachers felt that they were able to successfully use Vidcode in their classroom for three weeks during distance learning.

Researchers gathered data through classroom observations and teacher post-interviews to develop an understanding of how teachers implemented the Vidcode curriculum with their students.

### Teaching Practice in a Virtual Class

At the beginning of each class, teachers in the study started their lessons by modeling the final product of that day's coding tutorial to students. One teacher incorporated popular media content into his coding sketches, such as Lord of the Rings, into his lesson demonstrations to get students engaged and excited about the lesson that day. After the initial introduction, students would work independently throughout the class period.



***“[Vidcode] built their confidence in coding. They had a product they were really proud of.”***



Distance learning required minimal modifications to teaching with Vidcode. Teachers followed the JavaScript 101 suggested sequencing and were able to use many of the Vidcode features to track student progress and learning. Additionally, quizzes provided rich opportunities for teachers to understand how and what their students were learning. The teachers also used Vidcode’s lesson plans extensively. They reflected that having a lesson plan is helpful to guide students and ask questions about their understanding along the way.

Progress Reports on Vidcode were crucial for understanding how fast students were progressing through the content. One teacher commented that: “[the Progress Report] was really good because it was a way of holding students accountable. That was key.” With distance learning, this metric was very useful for teachers, since they were unable to walk around the classroom and gauge student progress by watching them work. One teacher specifically highlighted that this feature is helpful for allowing students to go at their own pace.

Both teachers felt that Vidcode was easy to pick up and made it easy to add students, even in a virtual environment. “Getting started was relatively simple and straightforward. Frankly, during the pandemic, I’ve been a bit overwhelmed by the amount of new programs I’m being asked to learn. There’s a lot, but Vidcode was easy.”

### **Computer Science Learning Outcomes**

Both teachers felt that their students’ knowledge of specific computer science concepts increased through Vidcode use. “They learned what a variable is and what a function does.” Additionally, students commented on their own improved coding abilities. One teacher described, “I noticed some students say ‘I had no idea how to code, and now I know more about JavaScript.’”

## Student Engagement

Overall, students reported high engagement in their Vidcode use, finding the platform to be easy, fun, and relevant. Teachers and students both reported high student engagement in using the Vidcode activities, and teachers reported that some students planned to continue using the curriculum on their own after the study. Both teachers highlighted that Vidcode's curriculum was very appropriate and relatable for middle school students, especially in comparison to other instructional resources. One teacher commented: "A lot of students were stoked when they got to make a meme or a Snpachat Filter. They thought that was cool."

When asked how the Vidcode curriculum compared to other computer science resources, teachers reported: "The images that were pre-loaded were middle school friendly, and students connected with them. They were excited to do the projects, like making filters and memes. That's a lot of the world they live in."

Students reported that they liked that Vidcode let them express their individuality, and that it is fun and easy to use.

Analysis of the qualitative data suggests that Vidcode's programming interface helped students feel more like coders. "I think they actually felt more like coders, where they were making a language happen and when it made something, or didn't make something, they had to figure out why it wasn't working. They had to identify and fix those errors, which is a really important piece to coding."

Teachers described an increased confidence in coding and a sense of student pride in their coded projects. At the end of his first two lessons, one teacher described: "We did a thumbs up, thumbs down on what they thought, and I got a lot of thumbs up. [Students] did enjoy it and they felt very confident. It built their confidence in coding. I think it was three or four lines of code, and they liked it and felt like they were proud that they did it. They had a product that they were really proud of. That was really good."

## Conclusion

Findings from the study indicate that Vidcode could be successfully used by teachers and students in the classroom, specifically during distance learning environments. Data from the classroom debriefs, teacher and student survey data, and teacher interview data indicate that the teacher dashboard features were useful for supporting computer science instruction and that students were highly engaged with using Vidcode.

**Research + Student success = **