



# Case Study: Succeeding with JavaScript at Blue Peak High School

June 28, 2022

[Blue Peak High School](#), a public school located in Utah, USA, introduced lessons from Zenva Schools as a core part of their programming classes, and noticed a range of positive outcomes.

The class teacher, Jonathan Black, had only limited JavaScript experience, yet the lessons on Zenva Schools made it easy for him to learn and teach the lesson content. Additionally, the flexibility of the platform allowed him to expand upon the content, and easily create his own formative assessments based on the needs of his class.

The structure of the lessons within the platform helped Jonathan to efficiently manage his classroom, and easily cater to students who both struggled with the content, and who worked at an accelerated pace. Zenva Schools provided his students with skills needed to define and create their own projects – a powerful tool to increase students' internal

motivation, and for providing the drive to continue with programming. Perhaps most importantly, the skills taught by Zenva Schools proved to be transferable to real-world projects, better preparing students for life after high school.

This case study takes an in-depth look at how the lessons on Zenva Schools were implemented in the classroom, from material selection to classroom management, and discusses how the above positive outcomes were achieved.

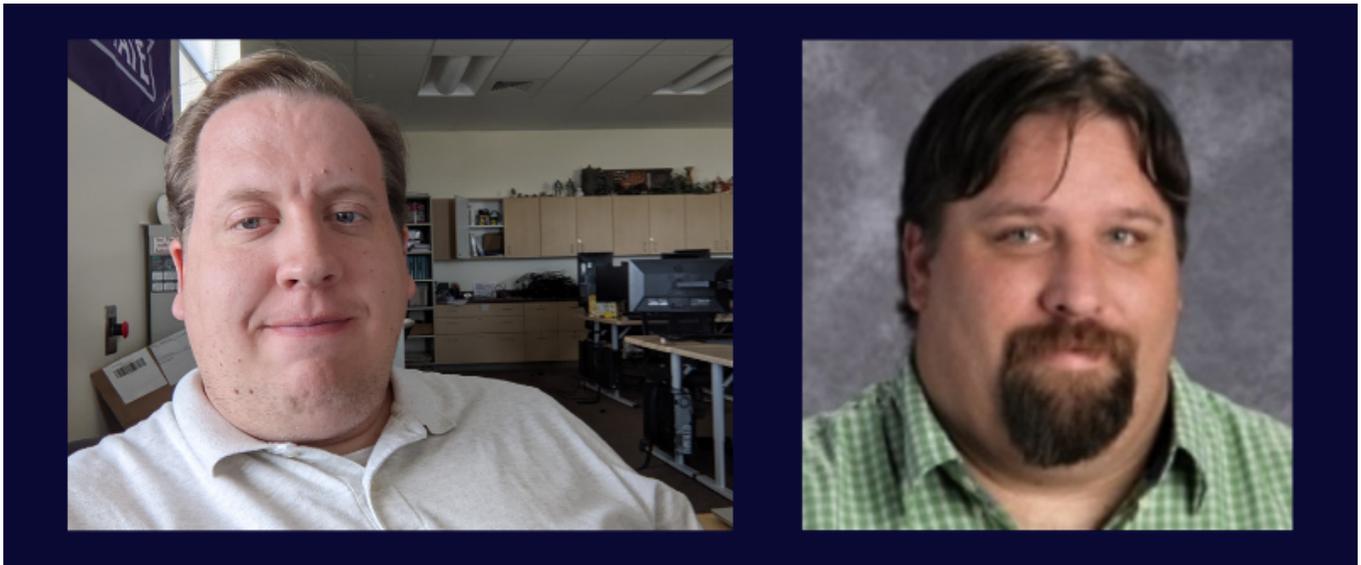


- ✓ **Provided teachers with professional development on new technologies**
- ✓ **Increased student engagement & motivation**
- ✓ **Improved classroom management**
- ✓ **Skills learned by students were applied to real-world settings**

## The Class

This case study focuses on Jonathan Black's class, *Programming 1 – JavaScript*, and included 15 students from grades 10, 11, and 12. Working on an alternating schedule, the class met five times every two weeks (three times during week A and two times during week B) for two-hour sessions. The course ran for one semester, from January to the end of May.

Although not discussed in this case study, the Unity courses on Zenva Schools were also used by Jonathan's colleague, Eric Broadbent, for approximately 40 students in grades 10, 11, and 12, as a core component of his game development class.



*Left to right: Jonathan Black, Programming Teacher; and Eric Broadbent, Programming Teacher*

## The Challenge

After agreeing to teach two JavaScript classes during the upcoming semester, Jonathan had just two weeks to evaluate resources and set the curriculum. In addition to the pressures of a tight time frame, Jonathan had to start from scratch. The course materials taught in the previous year used a proprietary sandbox environment in the browser, which restricted students in transferring classroom skills to the outside world.

As such, Jonathan elected not to use them. Instead, he decided to look for a flexible curriculum that would help his students to learn JavaScript in any environment, and that provided practical, transferable, industry-relevant skills. Post-secondary training was not part of his students' career paths, and many were aiming to find employment after graduating from high school. To support these students, Jonathan looked for a well-designed program to equip his students with marketable job skills.

After researching his options, Jonathan settled on Zenva Schools, which features content aligned to the Common Core State Standards, CSTA Computer Science Standards, and the K-12 Computer Science Framework. The lessons are written by industry experts, and have been taken by over 1 million learners and professional developers on Zenva Schools' sister platform, Zenva Academy – highlighting their relevance within the industry. As Jonathan describes, "It's all universal, and you can use it anywhere – and that's what made me say 'Yes, that's the software I want to use going forward'."

Jonathan chose to implement the lessons from two Zenva Schools modules in his class: *Intro to JavaScript* and *JavaScript Project – Language Learning Game*.

## Goals

For Jonathan, the ideal outcome was that students could apply and adapt the JavaScript knowledge presented in the Zenva Schools lessons to their own coding projects. In this scaffolding approach to learning, Jonathan asked each student to define a project that they would like to create. It had to be specific and digitally tangible.

A secondary goal was universal learning. Every student needed to demonstrate that they learned the core content of each lesson. To achieve that goal, Jonathan would have to tackle three classroom management challenges:

- Staying current with the course content
- Finding ways to keep fast learners progressing with meaningful work
- Creating time for students who need extra help



## Using Zenva Schools

As a new teacher with limited JavaScript Skills, Jonathan first used Zenva Schools to expand his own skillset. “All of the courses I assigned to my students, I worked through them *at least* two weeks ahead of where they were, so that way I knew exactly what we are

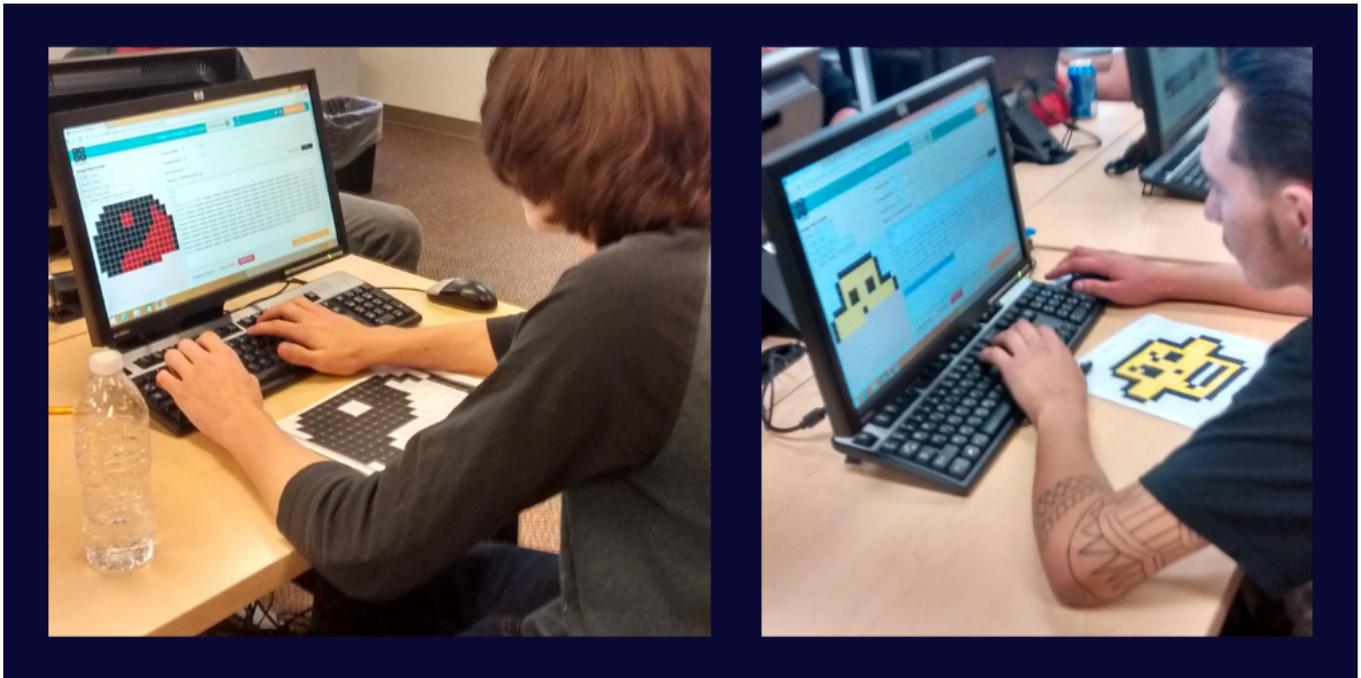
going up against.” By familiarizing himself with the lessons and gaining the skills he needed to help the students learn the content, he was better able to anticipate questions, solve problems, and troubleshoot issues.

A typical two-hour class covered two lessons. At the start of class, Jonathan would slowly run through the lesson video. While the content duration was ten minutes or less, this part of the class took up a significant part of the period. During the video, Jonathan would stop and start at key points to check student comprehension, give slow typers extra time, and explain the reasons behind a given task. The remainder of the period was spent on independent learning, practice, and teacher feedback. After a short break, the class would complete the second lesson with the same learning format.

Although the class met in person, Jonathan required all students to join a Google Meet. In this digital space, students could easily share screens and show their work with the teacher and classmates.

In addition to the lessons and quizzes that come with each module on Zenva Schools, Jonathan created a series of end-of-lesson assignments, which challenged students to apply and expand classroom knowledge. Students might, for instance, be asked to create a loop with five variables. Each assignment typically required 20 to 30 minutes to complete.

These formative assessment assignments provided Johnathon with an opportunity to monitor progress and identify struggling students. Walking the classroom, he could scan student notes, identify students who had hit a barrier, and give them extra help to solve the problem.



While grading the assignments, Jonathan could identify common issues, such as naming practices or problems with spaces. In class, he could help all students notice these common issues and fix the errors.

At the end of the semester, the students took a summative final exam, where they demonstrated their knowledge of practical skills learned during the class. At the time of this interview, they were also preparing for the state certification exam, where students with a state exam score of 80% or higher are certified as being proficient at programming.

## The Results

By implementing Zenva Schools, Jonathan experienced a range of positive results. The platform allowed Jonathan to expand his JavaScript skills, and to successfully learn and teach the content in class.

Additionally, the way that Zenva Schools broke down content into short lessons made classroom management easy and efficient. Students who finished early were able to put on a set of headphones and watch the upcoming video lessons independently. As Jonathan mentioned, for “the people that were super far ahead, it was no big deal. They had plenty of stuff to keep them engaged, to keep them busy with meaningful work”. This allowed Jonathan the extra time he needed to focus on students who were struggling with the content. By the end of the class, every student was able to leave the classroom with a solid understanding of that day’s core knowledge.



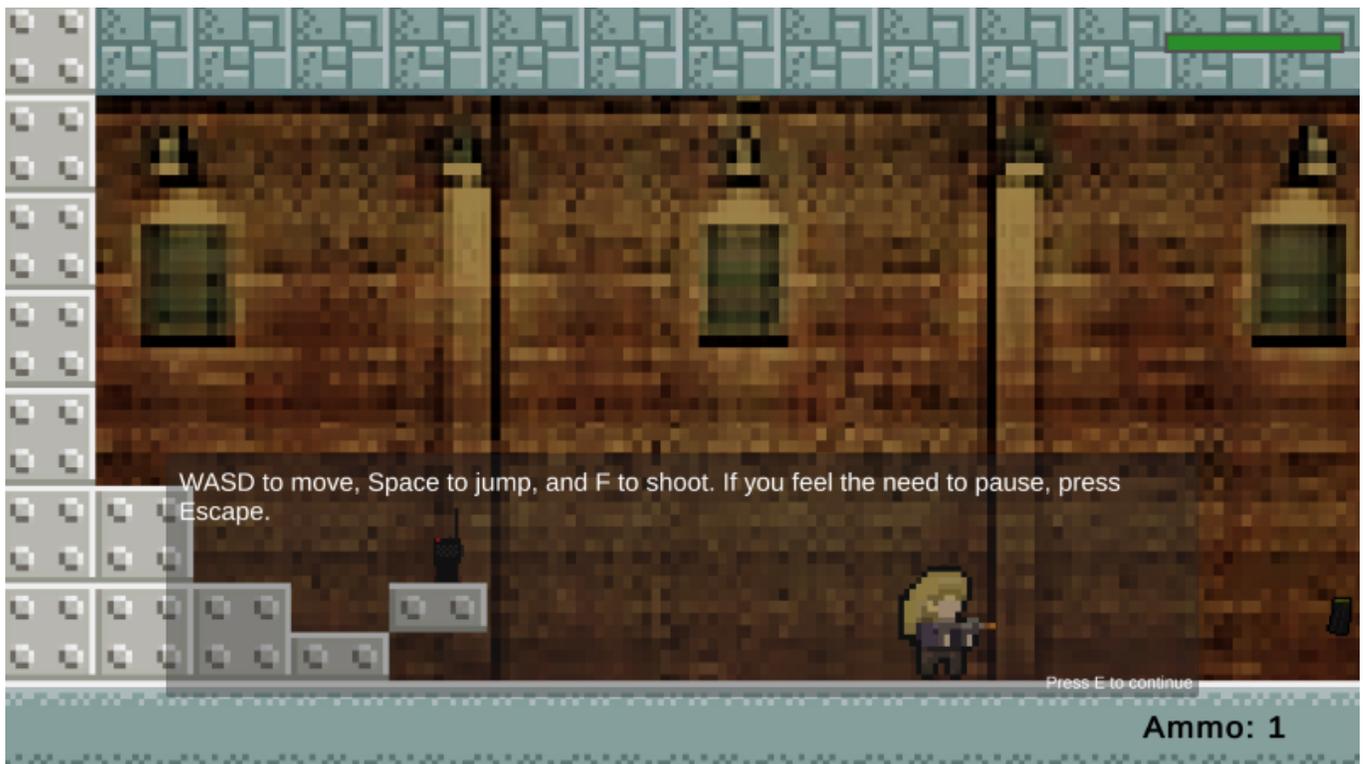
*Project created by Blue Peak High School students*

The ability for students to apply their new skills also created a sense of positivity, pride, and motivation in the students. Jonathan noted that the students “walk into my classroom, they go, ‘Hey, I can use this, and I have something that I can show my parents, I can show my friends’”.

For Jonathan, one of the key successes was watching the school’s programming students compete in a game jam, where they worked in teams to create an 80s-style video game:

“One of them made a two-player Pac-Man, one of them made a Duck Hunt game where you can actually shoot the duck, one of them made a Mario clone but instead of Mario, they made it specific to their classroom – and *that’s* what was exciting to me, that they could actually take this knowledge that we’ve been giving them over the last however long, and they really could implement it in the real world.”





*Projects created by Blue Peak High School students*

## Insights and Tips for Teachers

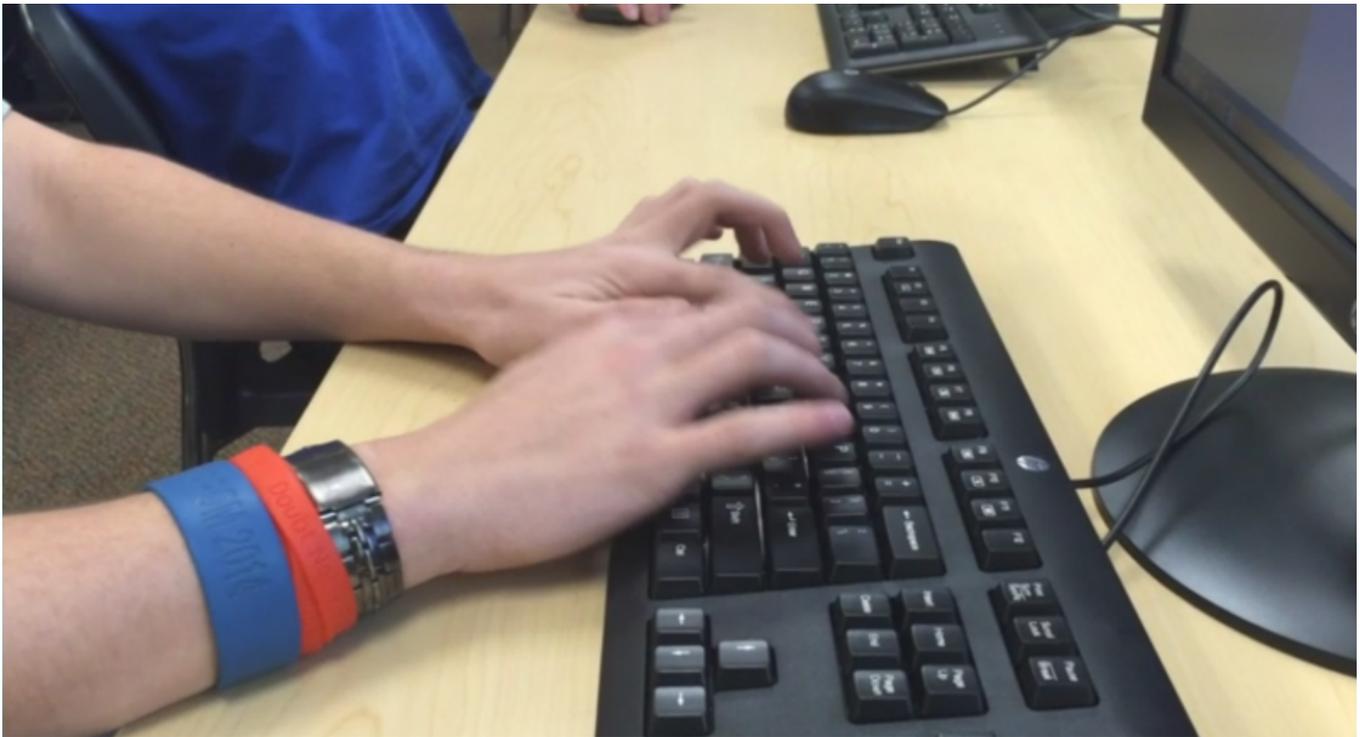
During his experience with Zenva Schools, Jonathan gained several insights into teaching coding.

Firstly, the causes for a student struggling in class was not necessarily tied to their understanding of the lesson content – digital illiteracy and the inability to type often played a huge role. For instance, many students were weak typers because “so many of them were just so tied to their mouse” – an issue that made teaching keyboard shortcuts a challenge. Additionally, many students initially didn’t grasp the value of copying and pasting as a coding tool. After dedicating a whole class to keyboarding basics (from alt key shortcuts to touch typing), Jonathan noticed a significant improvement in the students’ ability to keep up with the course content.

Jonathan also discovered the value of learning the correct terminology beforehand – especially for teachers who are new to the subject: “You’re going to come across a term that you should probably know. Don’t be afraid to go look it up.”

He learned the importance of purposefully creating errors and understanding their root causes, and recommends that when it comes to code, teachers should “try to break it. Try

to make sure that you understand where your students could make mistakes”, as this puts you in a better position to explain problems and solutions.



Finally, Jonathan believes that teachers shouldn't be afraid to make mistakes in front of students, as these can be great learning opportunities. When the teacher can say to the class, "Let's debug it, and we'll fix it, and we'll move on," they normalize mistakes and signal a positive mindset to students who feel frustrated and might want to give up.

## Analysis & Conclusion

As a result of his positive experience with Zenva Schools, Jonathan intends to continue with Zenva Schools going forward. He also has plans to further innovate with his use of the platform, and sees opportunities to tweak the assignments he built on Zenva Schools' foundation.

One such innovation is in providing students with a more active role when it comes to decision-making. Success in coding requires internal motivation, and this can be achieved by allowing the students to have a greater say in defining their final project, and a greater role in the discovery process. Because the skills taught through Zenva Schools are highly transferable and are designed with real-world applications in mind, Jonathan aims to give students more opportunities to define their projects in future programming courses.



*Projects created by Blue Peak High School students*

Jonathan’s classroom experience demonstrates the adaptable nature of Zenva Schools. It provides resource-rich, ready-to-use lessons for teachers looking for structure, and the flexibility to support more freeform learning activities.

Finally, the courses on Zenva Schools are both aligned to national standards, and are written by industry experts with a focus on providing real-world, transferable skills – ensuring that teachers can balance the needs of the curricula with preparing their students for success after high school.

***Interested in trying Zenva Schools? [Get in touch with us here.](#)***

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