

Bringing Education to Life With a Drive-In Cinema

Wesley Adkins, algebra 2 and geometry teacher at James Campbell High School (JCHS), Ewa Beach, Hawaii, explains how he has used a recent \$25,000 grant to bring all areas of the education standards to life for many of his students, some with individualized education programs (IEPs).

Like the various communities that have lived in Ewa Beach, Hawaii, over the years, our students at Campbell High come from very mixed cultural and socio-economic backgrounds. I have some students with undiagnosed dyscalculia and others on the autistic spectrum with individualized education plans (IEPs) or a 504 plan to ensure their academic success and access to the appropriate learning environment.



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The main problem for teachers working with students who have various disadvantages is that many of them lack extrinsic motivation and they can get discouraged very easily as they hate feeling less capable than their peers. As Jon Henry Lee, our principal, says, “It’s all about capturing their imagination first,” and this is what we focus on.

As a film enthusiast, I was excited to apply for, and win, a \$25,000 Education Innovation Teacher Challenge grant to run a film-related project that incorporated all areas of education standards. My idea was to create the Ewa Beach Drive-In Cinema, employing project-based learning to harness the students’ varied interests. The goal was to help them develop diverse skills, from using computer science to calculate the projector’s pitch onto the screen to developing business plans and creating a computer app.

The Drive-In Cinema is an interdisciplinary project, and we are working to bring in students from all our different academies to explore things they are passionate about through the lens of the theater.

Innovation to Support the Challenges

Let’s take math as the first example. I am an algebra 2 and geometry teacher at the school. As you can imagine, a lot of our students instantly tune out the second I talk about geometry or math. However, now that we’re working on the Drive-In project, I have them engaged and motivated.

We are currently considering the supply of popcorn. The students are working



on calculating the necessary quantities; costs of the corn, the buckets, and the machine; and, of course, how much revenue they need to make the theater sustainable.

The next day, they may use *trigonometric ratios* to solve problems including the ideal size for a particular number of patrons and angle of elevation with respect to the screen. For instance, if the screen is 16-feet high and 30-feet wide and the seating area is 50-yards deep, what is the best viewing angle of the screen?

When it comes to student engagement, the success of the project is largely due to gamifying everything we do. I like using the online math resource Mangahigh (www.mangahigh.com), which provides a games-based approach to learning skills. The learning is aligned to the Common Core and the problems are delivered in terms of real-life challenges.

Within the framework of real-life situations, the students find it a lot easier to visualize the problem and are truly engaged in deciding which mathematical skills they need to calculate the answers. Using these types of resources, I can get them off the conveyor belt of individual math skills, safe in the knowledge that they are learning these core skills while, more importantly, understanding their real-life applications.

With so many students from different classes involved, we use the Jamboard whiteboard app to get them collaborating in innovative ways, including drawing up the designs and layouts for the cinema. Thankfully, students could use their tablets during the pandemic school closure to access this tool remotely and continue collaborating with their peers and teachers.

Measuring Our Success

For us as educators looking to engage our students in the fun of learning and helping them see how it applies to their lives, their excitement and involvement is a huge measure of the project’s ongoing success.

We are seeing a gradual shift in the students’ concept of learning, from static classroom-based lessons that simply churn out formulas and problem sets to a bigger picture that

includes practical application of what they are learning.

All the teachers at the school are demonstrating the true embodiment of project-based learning, while also following the national standards. The possibilities are limitless. I’m a firm believer that if you can just find something that the students love, they will learn about the rest of the world through that.

To me, that’s success!

The Outcomes for All Students

However, we also need to provide quantitative data on students’ specific success in each academic skill area. For this, we use Mangahigh. Although the questions in the online math resource are set in the form of a real-life problem, the software automatically calculates their understanding of each mathematical skill based on their responses.

If they get the first few questions right, the tool can then automatically assign them slightly more complex questions. If they are not demonstrating full understanding of the learning objective, it can step the next problem to a slightly lower level to help them consolidate their learning further. The students learn from their own mistakes

and are guided through the learning, developing a strong growth mindset. It also means that all math teachers can track their results and easily identify in which areas students are struggling and where they need more individualized attention.

Elements of Our Success

The Ewa Beach Drive-In is coming to life right now because of the students who believe in it, grant providers who supported us (Farmers Insurance Hawaii and the Hawaii Public Schools Foundation awarded us a \$25,000 grant for equipment), and organizational partners committed to helping us scale up.

“Come correct,” in other words, speak to others with respect, is a moral and ethical lesson that I believe everyone should learn. When I moved to O’ahu, I never thought I’d



be opening a movie theater here, but I knew that I wanted to give something back to the kingdom where I was planting roots. Too often, people come to Hawai'i to enjoy its fruits without ever considering the responsibility or debt they owe for that sustenance. That's not really me. Sharing my love for cinema with the community that has embraced and welcomed me into a new life chapter is really my kuleana (responsibility).

The Challenges and Barriers

Like everything else, the COVID-19 pandemic has certainly brought in some challenges, but all our students have managed brilliantly. While they haven't been able to work together to brainstorm ideas to plan the next stages of the project, we have used a number of technologies to replace live meetings. Flipgrid, which is like an educational Snapchat, has helped the students create discussion themes to share. Taking the popcorn topic as an example, I asked them to experiment with popcorn recipes and review them. We had rocky road, cheesecake, and peanut brittle. Very soon, we started to build video-based reviews of each recipe from the students, their families, and friends.

We also wanted to ensure that all our work on the drive-in was done with sustainability as a priority. One example is eco bricking. The students have been collecting plastic waste, including chip and candy wrappers, and stuffing it into 20 oz plastic bottles. Once full, the bottles can be used as bricks—a common practice in the developing world. Because of the pandemic, our students have worked autonomously and remotely at home to collect all the plastic they can find, making the eco bricks and storing them in their homes and gardens. Despite the pandemic, we're also up-cycling other plastic bottles into popcorn buckets, showing a real-world application of cleaning up plastics.

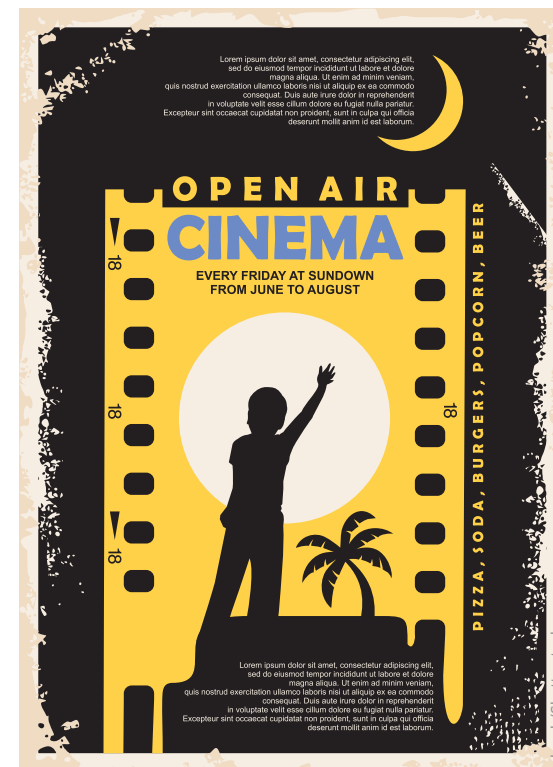
Expansion Plans

I am a strong believer in the power of bringing the real world into learning, rather than having the children sitting at desks churning out calculations and numbers all day. The level of engagement we have seen from all

the students is a testament to the power of such learning. So, my advice to other schools is to work with other departments in the school to create similar projects that span all areas of the curriculum.

People ask me if we really are going to create a fully functioning drive-in theater or whether it's just a virtual project. The answer is that while the initial objective was to use the project to engage all our students in cross-curricular learning, it has been so successful that we want to take our dream as far as we can.

The initial \$25,000 Farmers' Insurance funding that we won for the project will only go so far. We have invested in many necessary parts of our theater, including a generator, but are currently only able to plan for a relatively small outdoor area with a projector screen to display the movies. With a lot more work, a bit of luck, and significant positive learning opportunities, our students would love to take this initial trial to a larger level and, yes, actually create a fully functional drive-in theater business that the Ewa community can enjoy.



At the moment, thanks to our collaboration with Teach for America, we presented at this year's Spark & Inspire event. The event showcased "edupreneurs" bringing big ideas to the world of education and learning. It was also an opportunity for us to find support for our larger goal of making the drive-in more than just a school project. My students are working toward turning our theater into a fully autonomous non-profit organization, attracting youth from our community to take part in everything we're about. Our motto is simple: Watch movies. Save the world.

My Advice to Other Schools

Find your muse, dream without boundaries, and lay your bricks as perfectly as you can.

Believe it or not, I was inspired to reimagine what learning in the 21st century looks like by the late Nipsey Hussle. After seeing the work he put into Vector 90 and STEM education, I started questioning my own teaching pedagogy. I would give other innovators the same advice I got from Nipsey: Instead of trying to build a brick wall, lay a brick as perfectly as you can every day. Before you know it, you'll have built a wall. In other words, don't lose the tree in the woods.

Innovators often live with their heads in the clouds; I know I do. Yet without an anchor, we tend to drift. I've been successful getting mentors and coaches in my corner who can both see my vision and also keep me accountable to the bricks I have to lay.

I've learned to lick my wounds and hitch my wagon to the growth mindset. Failure is part of the process of innovating, but as long as we're learning from our failures, we're on the right path. I can't pretend like this student-run drive-in coming to life is the result of impeccable poise or proclivity for hard work on my part. The only thing unique about me and this dream is an unrelenting persistence to make it all tangible.

Tikichuela Mathematics

In some regions of Paraguay, children are leaving school without important numeracy skills. The problem is higher in rural areas, where teachers lacked adequate pre-service training. The imaginative solution developed by Tikichuela Mathematics was to turn every lesson into a script and record it as an interactive radio program full of music, theater, singing, and games. With this content, all teachers can deliver a high-quality lesson regardless of their own knowledge or ability.

Rather than the traditional learning by rote, Tikichuela Mathematics uses a play-based pedagogy. Friendly characters guide listeners through the lessons and prompt active involvement through dance, theater, song, and movement. Rather than replacing the teacher, the audio lessons guide the teacher in the delivery of the lesson to ensure that all children get access to high-quality mathematics instruction. To ensure that all children learn, the lessons repeat all key concepts in both Spanish and Guaraní.

Teachers don't need much initial training to start using Tikichuela Mathematics. There is some training in the days before school starts, and teachers receive in-class tutoring with modeling of teaching and feedback during the school year. In addition, groups of teachers meet regularly to discuss challenges and successes of specific lessons.

The project started with preschool, but has been expanded to 1st and 2nd grade and is currently being developed for 3rd grade. Moreover, a Tikichuela Science program is currently being piloted in preschools in the department of Caaguazú. Impressed by the success in Paraguay, the Panamanian government has adopted the program.

