

Ocoee Middle School 3D Pilot Case Study

Orange County, Florida's Ocoee Middle School embraces 3D projection solutions drive by Texas Instruments for breakthrough lessons in math and science



Client:

Ocoee Middle School, a 1,600-student school serving the Orange County Public School system. OMS is a demonstration "Smart School" for the State of Florida.

Challenge:

Bring higher levels of classroom engagement and new presentations of challenging concepts.

Solution:

Mitsubishi XD600U and Vivitek D837 DLP® 3D-Ready projectors providing 3D content to enhance the curriculum.

Results:

Through an initial six month pilot program, several teachers are delivering lessons in science in grades 6-8 and math in grade 8. Students are more engaged and able to grasp sophisticated concepts in memorable ways. Also works as a traditional 2D projector.

Serving more than 1,600 students in Central Florida's Orange County, Ocoee Middle School was completely rebuilt in 2001 as part of the state's "Smart School" program. The extensive collaboration among teachers, administrators, and numerous building contractors resulted in a facility that is a jewel in the state's school system with approximately 100 technology-rich classrooms featuring video projection, audio amplification, and much more.

Today, Sharyn Gabriel, Ocoee Middle School principal is leading the school forward through a transition that embraces newer technologies even more fully, extending the school's leadership in cutting-edge educational techniques. One of the key initiatives has been a demonstration project that uses new 3D video projection in the classroom. The school has deployed Mitsubishi and Vivitek 3D-Ready projectors that are based on DLP technology from Texas Instruments.

"Without question, the biggest advantage is the engagement factor," said Gabriel. "Let's be honest – the reality is that traditional classroom techniques aren't always reaching major segments of our student populations. It's not that they aren't capable. Think about how a middle schooler today will attack a new video game and try 50 different times to beat a certain level of the game by testing

theories, trying solutions, talking to others. Those are exactly the skills we're trying to develop: critical thinking, collaboration, and problem-solving.

"But there's no point in whining about 'today's kids.' The job is to find solutions and, to me, the 3D projection is a big piece of that solution. It connects with our current generation of students."

"Our school is fortunate to have some aggressive, progressive teachers who've stepped up for this demonstration program. They're leading their peers and showing that it can work. They're creating a culture of 'OK, we can try new things. We can show the students they're worth this.' And in the classroom, it's creating an exceptional dynamic."

***Sharyn Gabriel
Principal
Ocoee Middle School***





Engaging the Faculty

According to Gabriel, it's not just about engaging students. For 3D projection to work in the classroom, teachers need to fully and firmly adopt the technology as well. "Starting off with 3D can be a bit scary for the teacher, of course," she said. "It requires a bit of a time investment. If you've been teaching math for 10 years,

you can't just shift from autopilot mode to this new paradigm without some effort. "Our school is fortunate to have some aggressive, progressive teachers who've stepped up for this demonstration program. They're leading their peers and showing that it can work. They're creating a culture of 'OK, we can try new things.

We can show the students they're worth this.' And in the classroom, it's creating an exceptional dynamic. Students will often ask the teachers to try new things and they're open to that. It's very empowering and collaborative, which is a superb environment for learning."

Easy Training Means Fast Start

According to Tony San Fillippo, Instructional Technology Coach, the transition has been relatively smooth for the teachers. "The training was really easy," he said. "We provided some documentation, showed them the software and gave them an overview. They've been able to take it from there. Many pieces of the content are video – not a lot of manipulation – so from a curriculum perspective, this has created very little disruption.

In Grade 7 science, Wallace Phillips uses the 3D projection to cover some sophisticated physics concepts. He's used it to demonstrate 3D shapes and mass. He disassembles cubes and cylinders and shows the math formulas. "I'm a high-energy teacher," he said. "The 3D projection matches my style because it makes the presentation of the material much more exciting. Even though they couldn't touch the components, it seemed

more real to them. "For the students, the reaction is always amazement. This isn't like the old movies they've seen in the classroom for years. And the image is much better than what you get in a movie theater."

Maurio Medley, a Grade 8 math teacher and former physical science teacher, sees 3D as a gateway to new insights for students. "With a culture of TV, movies, and video games, today's students are predominantly visual learners – but there's only so much you can do in 2D," he said. "If they can't see it, it's harder for them to understand and believe. With 3D, I can show how things are packed together, how electrons move around. I can show motion and bring the lesson to life.

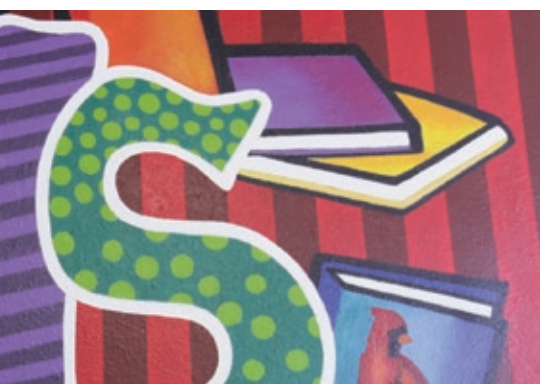
"In math, I like using the 3D projector to explain geometry lessons. It's great for volumes of shapes, where we can rotate and twist the objects. For some kids, whose brains are still developing, this is a tremendous advantage. We're not looking at a small cube model on my desk. We're disassembling a huge 3D cube image on the screen."

Medley also noted the major advantages of the "cool" factor that comes with trotting out the 3D glasses. "It's plain that they are much more interested in the 3D

lessons," he said. "When they see the glasses come out, they're excited – even if the topic isn't the most interesting one.

"This isn't like the old movies they've seen in the classroom for years. They love the 'bling' that comes with the images on the regular, large screen. And the image is much better than what you get in a movie theater."

***Wallace Phillips
7th Grade Science Teacher
Ocoee Middle School***



Student Engagement with 3D Content

In Barbara Ann Popp's seventh and eighth-grade physical science classes, 3D projection is changing the classroom dynamic. "I can tell you – with 3D, we're grabbing the students' attention very quickly," said Popp. "It's entirely different – and better – than me simply teaching from a flat picture in a textbook. They can see the inner workings of these phenomena – and it makes it all very real-life for them. And the students think this is 'totally cool.' They can't wait for the 3D glasses to come out."

It's a similar story for Milton Mariani, a sixth-grade life-sciences teacher. "Things like cells, DNA, and organelles are hard

for sixth-graders to envision. Now, I can completely change how I present these topics. The DNA lesson was fantastic – we could really see the spiral shape and explore it in detail. I've used lessons on plant cells where we really see actual cells. When we talked about mitosis, we could see what was happening in the cells. It's literally almost an immersive experience. The kids know that everything isn't flat like in a textbook. They're seeing that third dimension which is hard for an 11-year-old to grasp. Their attention levels are through the roof – and, as any teacher will tell you, attention is half the battle."

The Right Choice for the Future

For Gabriel, 3D projection in the classroom comes down to a simple matter of logic. "I can't see any reason why you wouldn't adopt and install 3D projectors from this point forward," she said. "Knowing that they cost roughly the same, why wouldn't you move forward with 3D so that you're

ready to integrate those lessons into the curriculum whenever you want. We're gradually refreshing all of our classrooms – about 20 or so a year – and we won't buy a projector that isn't 3D-capable, it's the right choice for us for the future."

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Find out more about how 3D projectors can help schools enhance curriculum and expand learning opportunities.

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