Augmented reality platform could help students discover STEM concepts through interactive experimentation

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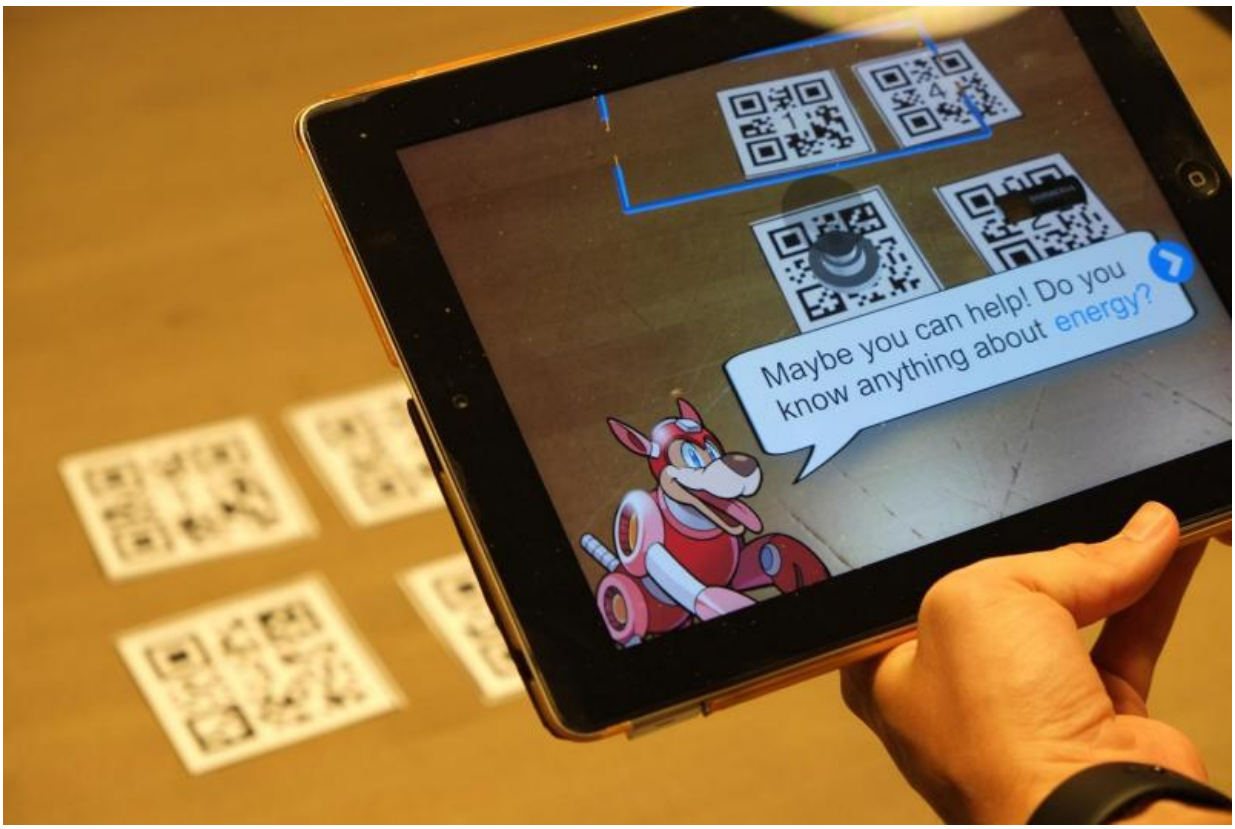

The Explore! Interactive app assists teachers demonstrate lessons to their students through its gamified interactive platform. Combining specific pedagogical techniques and augmented reality, students learn STEM concepts while playing games. The platform's augmented reality technology places 3-D models on a student's desk, using any iPad, tablet or smartphone. Credit: Purdue Research Foundation / Kelsey Henry image

Explore! Interactive, a Purdue-related startup, is developing a platform that uses augmented reality to help K-12 students more effectively learn science, technology, engineering and mathematics, or STEM subjects, and increase standardized test scores through an engaging, interactive application.

Explore! Interactive was founded by Wesley Virt, a recent graduate from Wabash College. Additional team members include Chris Palermo, a senior in Purdue's Krannert School of Management, and Zhe Zeng, a graduate student, Sam Rosser, a junior, and Jack Allen, a senior, all in the Purdue Polytechnic Institute.

Explore! Interactive enhances the classroom learning process by allowing students to discover STEM concepts through experimentation and gamification. The platform's augmented reality technology places 3-D models on a student's desk, using any iPad, tablet or smartphone. Additionally, each lesson is presented as a game that students must complete before advancing.

Rosser said the goal of the platform is to make learning seem like play.

"Many students think of learning as boring, monotonous lectures with stacks of homework or textbooks. There are no alternatives for students who don't enjoy or exceed with that kind of learning," he said. "If Explore! Interactive can spur positive emotions toward learning at an early age, we can inspire so many kids to do so much better later in their lives. We want to help promote inspiration in children as they learn."

Virt said the team believes its product will fit the growing demand for affordable and accessible educational technology.

"Explore! is more affordable, more accessible and more interactive than other alternatives," he said. "Our application allows pretty much anything to be brought into the classroom through augmented reality. More so, students can still move things around with their own hands and figure problems out on their own in an interactive way."

The company researched teaching techniques and consulted with education professionals to cement the platform's pedagogical methods.

"We have been working with an educational psychologist at Harvard," Virt said. "She gave us the idea to try and make learning seem more like play, whether at home or at school. Therefore, we developed the platform so students feel like they are playing with Explore! and not just learning a specific concept."

Virt said the platform is designed to meet state educational standards that define the knowledge and skills students should have within their education.

"We developed the product to increase K-12 standardized test scores," he said. "While accomplishing a 'mission' within the platform, students will learn a specific concept relating back to a common core standard. For example, to teach a science standard, Explore! Interactive places students within a lighthouse where they will learn various concepts about electricity such as building a circuit."

The company plans to transition into the beta2 platform and expand the interactive capabilities.

"Our key characteristics are accessibility and affordability," said Virt. "Parents or teachers can print any supplements—we use mobile QR codes—rather than buying additives from a company. Our application incorporates intrinsic and extrinsic motivation factors encouraging

students to compete with their classmates and to see who can defeat the mission's villain."

Explore! Interactive will test its Beta 2 application in classrooms this fall.

"We've targeted teachers for our pilot testing to see how the platform affects the educational field," Rosser said. "We have partnered with schools in Indiana and Massachusetts that will be piloting our product for free this coming year. Once that phase is over, we will be marketing our product to both schools and parents."

The company credits the Purdue Foundry, an entrepreneurship and commercialization accelerator in Discovery Park's Burton D. Morgan Center for Entrepreneurship, as a great supporter of Explore! Interactive's launch and development.

"We wouldn't be here if it wasn't for the foundry and their resources," Virt said. "They help connect us with professionals in our field and have been there to guide us through the process. After being all over the state, I'm confident to say Purdue really is the best entrepreneurial environment a startup company can be in."

Virt and Rosser hope to see Explore! Interactive broaden its influence throughout and beyond the educational field.

"In the long term, we have the opportunity to explore places like space or the bottom of the ocean," Rosser said. "We fully intend to market our product more widely in the future. We want to take our company as far as it can possibly go. The possibilities are truly endless when you realize what our platform is capable of doing."

More information: For more information regarding the Explore! Interactive platform, please visit www.explorearplay.com/

Provided by Purdue University