

Oculus Education Partners with Research Institutions to Explore VR's Impact on Learning Outcomes

Oculus Blog

Posted by Oculus VR

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November 13 – 17 is National Education Week in the US. To celebrate, we're highlighting the intersections of VR and education with a series of blog posts. In Part 1, we dove into the latest news from Oculus NextGen. In Part 2, we discuss some exciting updates from Oculus Education, including a grant to support play4REAL, a new lab at Yale's Center for Health & Learning Games.

Knowledge Is Power

The mission of Oculus Education is to empower communities through VR's ability to positively impact learning and to support equitable access for all. To accomplish that goal, we need to understand how VR can have the greatest impact on learning outcomes across a variety of scenarios. Beyond our efforts to dig into existing research around VR and learning, the Oculus Education team sponsors new research to help us pinpoint and maximize VR's educational potential across pedagogy, academia, secondary and university-level education, professional training, life-long learning, and collaboration across disciplines.

We've partnered with several research institutions to design data-driven research projects that help us better understand which properties of VR may have the greatest impact on learning, under which conditions, and in what subject matters and environments. Read on to learn more about what they'll explore.

Yale Center for Health & Learning Games

Funded in part by Oculus, Yale's new play4REAL lab will develop and test VR

games for health education and behavioral intervention in adolescents and young adults. Under the leadership of Kimberly Hieftje and in partnership with PreviewLabs, play4REAL will develop and playtest *SmokescreenVR*, an immersive intervention used to investigate VR's ability to influence the perception and experience of peer pressure and development of social norms. The hope is that VR may ultimately be leveraged to impact health education and positive behavioral change, particularly in at-risk populations.



Image courtesy Yale Center for Health & Learning Games

Visit play4rlab.org for more information or follow @play4rlab on [Twitter](#) and [Facebook](#).

MIT Education Arcade

Led by Eric Klopfer, MIT will develop, pilot, test, and evaluate a proof-of-concept multiplayer VR experience for high school students, exploring cell biology with a focus on DNA, RNA, and protein translation through gameplay. The goal of this study is to understand the impact of VR in hands-on learning, particularly when dealing with the concept of scale, and to understand the ways in which traditional classroom resources can maximize VR's effectiveness as a pedagogical tool.

Cornell Virtual Embodiment Lab

Andrea Stevenson Won, Natasha Grace Holmes, Jonathan Schuldt, and their labs will develop a curriculum to compare the effectiveness of learning activities through table-top activities, computer simulations, and immersive, hands-on simulation in VR to better understand the tradeoffs and advantages of each. Beyond rote learning, this study will measure conceptual understanding, attitudes, and motivation while exploring the mechanics of moon phases and their impact on tides and sea levels.

New York University Future Reality Lab

Spearheaded by [Ken Perlin](#), NYU is developing *Chalktalk VR*, a digital communication and presentation language that can be used to teach in social VR learning spaces. Realized through an interactive, free-form “whiteboard,” *Chalktalk VR* investigates the ways in which digital collaboration in virtual space differs from a traditional classroom, the benefits involved, and subject matters most approachable in an immersive setting.

CEEK VR

With [Mary Spio](#) at the helm, CEEK VR is developing medical training scenarios specifically targeted at nurses. The first module will focus on identifying and treating sepsis—a potentially life-threatening condition. In addition to examining the efficacy of medical training in VR, this study will explore the attitudes among health care professionals toward VR as a training tool—both before and after engaging with a VR training module.

University of Michigan School of Dentistry

[Hera Kim-Berman](#) is heading a team to study the difference in student learning in diagnosis and treatment planning of complex jaw surgery cases using low-, moderate-, and high-fidelity methods including 2D manual tracing, 2D digital prediction, 3D digital prediction, and VR.

University of Michigan School of Nursing + Medical School

[Michelle Aebersold](#), [Prashant Mahajan](#), and their teams are working together to develop, pilot, and evaluate a collaborative Pediatric Advanced Life Support (PALS) simulation to demonstrate the feasibility of VR for improving medical teamwork, communication skills, guideline adherence, and patient outcomes in emergency treatment scenarios.

Santa Clara University College of Arts and Sciences

Under the guidance of [Debbie Tahmassebi](#), Santa Clara University will explore the potential role of VR in liberal arts education through three distinct projects. The first will examine VR’s ability to stimulate long-term change and collective action, while the second and third will investigate VR’s impact on philosophical thought experiments and contemporary workplace education through project-based learning, respectively.

New Jersey Institute of Technology

Led by [Eric Nersesian](#), NJIT is developing a chemistry curriculum at the high school level to determine the impact of VR on learning outcomes and retention in public schools. By comparing learning outcomes across students exposed to

similar curriculum presented in VR, textbook, and traditional computer game form, this study aims to formally assess VR's potential in secondary education.

Harvard Department of Computer Science

David Malan and his research team will translate CS50x: Introduction to Computer Science I into a live VR experience that can be taken by students around the world for free. To help distance learners feel more immersed in their education, this study will focus on demonstrating the strengths and feasibility of VR in collegiate education through livestreaming lectures and events in 360° video.

The More You Know

The results of these research studies will be made publicly available to benefit the entire VR community. Our goal is to better understand how the strengths of VR and AR can help us improve the world, through better educational opportunities for everyone.

We look forward to sharing more in the months ahead.

— The Oculus Team

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Tina Tran

Nice work, Oculus Education Research team! Can't wait to see the results of the partnerships.

Like · Reply · 2 · 9w



Sky Nite · Creator at Sky Nite Media

This is very exciting, I'm thrilled to see so many names already on this list! VR will accelerate certain aspects of learning at every level, while also increasing engagement. Eventually, as optics progress and cost comes down, VR will enable EVERYONE access to the best learning opportunities. The days of relying on geographical closeness to the best teachers are numbered.

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Joe Michaels · Chief Revenue Officer | CRO at HaptX Inc.

I got the chance to visit Santa Clara University's VR lab this week. Wonderful to see Oculus and SCU putting substantial resources into this facility. Can't wait for their research to produce useful results. Bravo to SCU and all the universities doing partnerships with Oculus Education.

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Theresa Maggio · Marketing Director at Bighorn Golf Club

Amazing program! Thanks for supporting SCU and building students' futures.

Like · Reply · 2 · 9w



Wade Stoddard · CEO at Mind Fusion VR

Keep us posted on any results please! Very interested to know how VR training and learning compares to standard and traditional methods. Results could mean a HUGE advancement in the way we learn and train. My company is focused on VR training and studies would back up the idea that training in VR is more immersive and engaging. www.mindfusionvr.com email me if you would like to collaborate: wade@mindfusionvr.com.

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