IMMERSIVE LEARNING

DISTANCE LEARNING PLAYBOOK

Smarter technology for all

Lenovo

IN THIS PLAYBOOK YOU WILL LEARN ABOUT:

- Top advantages of VR learning
- How schools are overcoming top VR implementation challenges
- Immersive curriculum-aligned content options
- Remote learning alternatives for VR-immersive lessons

TOP ADVANTAGES OF VR LEARNERS

4X faster to train than in the classroom

275% more confident in applying what they have learned

3.75X more emotionally connected to content than classroom learners

4X 4x more focused than their e-learning peers

Source:
1"The Effectiveness of Virtual Reality Soft Skills Training in the Enterprise," PricewaterhouseCoopers, June 25, 2020. Web.

THE PROMISE OF IMMERSIVE LEARNING

Virtual and augmented reality technologies have transformed entertainment, plunging players into immersive experiences and giving them access to imaginative new worlds. As popular titles from Pokémon Go to Beat Saber are capturing the imagination of students in their free time, educators are working to turn these dazzling and disruptive technologies into solutions that can directly drive stronger learning outcomes, leveraging them to make a meaningful difference in the classroom.

Despite the unparalleled advantages of immersive learning, school districts have been slow to bring VR solutions into their classrooms for various reasons. Two of the biggest obstacles are finding high-quality content and hardware designed specifically for K-12 usage. Content, in particular, is critical to actualizing the full promise of immersive learning experiences. As for hardware, it is a perennial technology challenge to find solutions with manageability features that support speedy implementation at a school-district-wide scale while maintaining the user simplicity demanded by busy teachers.

Despite these challenges, though, AR/VR is gaining traction with K-12 educators. From virtual field trips to interactive science labs and special needs accommodations, every day practitioners are finding new and insightful ways to leverage this futuristic technology in the classroom.

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IMMERSIVE LEARNING CHECKLIST

To ensure that VR technology enables meaningful learning experiences, consider these elements:

Advanced and student-ready hardware.

VR headsets and video processing have evolved dramatically since the first gaming headset was introduced in 1995. Today, standalone VR devices offer powerful immersive experiences without needing to connect to a computer. Controllers are a must-have to enable a variety of functions, and you'll need enough storage to use the devices now and in the future. Soon, classes will be developing their own VR content and you'll want enough room to deploy it all. Headsets also need to be durable and cleanable since they will be shared among many students.

High-quality immersive content.

There is extensive curriculum-aligned content now that enables a VR experience that can replace costly lab equipment and consumables, not to mention field trips that would never be possible. It's critical to have enough content for every age, level, and grade, since one size doesn't fit all. Teachers need the flexibility to fit content into their syllabus, not have it drive the syllabus.

Integration and manageability capabilities.

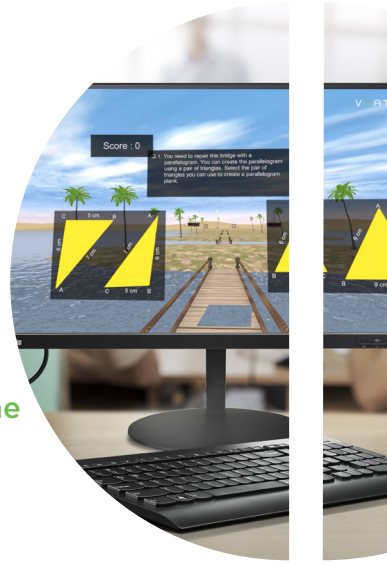
IT staff need the ability to easily manage a fleet of headsets, updating content and managing headsets without a lot of manual effort. Carts and carrying cases are also good options that allow for secure storage, mass charging, and easy transition from classroom to classroom.

Teacher confidence in working with VR.

Teachers need resource options to learn how to easily develop structured lesson plans using VR. Being able to monitor and follow along with student experiences via a tablet gives teachers the opportunity to redirect when necessary. Also important is software capable of capturing student achievement during the VR sessions, which frees up teacher time to focus on each student's learning.

Comprehensive support that is as specialized as the technology.

With an entire day's lesson plan depending on VR technology working seamlessly, it is important to be able to resolve issues quickly. Having a dedicated VR support team means getting the answers you need to keep the learning going.



VR CLASSROOM 2: ALL-IN-ONE, INSPIRED LEARNING

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Lenovo's educational solutions are designed to move technology from a good idea to great results with minimum complexity. Because when it comes to educational IT, teachers and IT administrators already have enough on their plates. They shouldn't have to piece together a complete VR solution that meets all stakeholders' needs as well.

- Students expect hardware and immersive lessons that are as cutting-edge as the technology ideals they see in movies or experience in games.
- Teachers have invested considerable time and talent in identifying learning goals and building plans to match. Immersive VR content must fold neatly into these plans.
- Finally, IT is already hard at work managing endpoints across the school. New hardware shouldn't increase these workloads.

This is where Lenovo VR Classroom 2 comes in. Lenovo's solution provides a complete learning platform including:

- State-of-the-art standalone VR headsets
- Robust content options through partnerships with leading educational software providers
- The proprietary ThinkReality® content management web portal which provides teachers a simple way to add apps and content to a fleet of headsets
- Simplified classroom management tools using LanSchool® Air that keeps all student headsets connected and focused on the same lesson elements — even if they are remote.

The VR Classroom 2 solution provides schools the best of all VR worlds: superior hardware, stunning content, and simplified management tools. With this solution, teachers and IT staff can spend less time on IT details, and more time on work that's critical to their learning mission.

Lenovo Mirage VR S3 headset

"We're really seeing an increase in excitement and in learning. The students are engaging with the material so thoroughly that they've begun to ask questions extending beyond their curriculum."

— Monique Debi, Principal, Fort Worthington Middle School

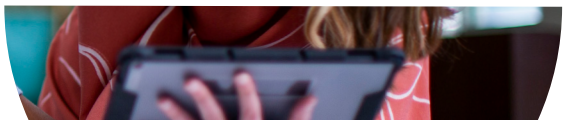
THE KEY CHALLENGE: EFFECTIVE VR CONTENT OPTIONS

While VR has shined in gaming and entertainment, schools have been hesitant to adopt it. Teachers and instructional specialists prioritize learning outcomes, which sets the bar high for quality educational VR content. That means taking what makes VR so special for gamers — immersive environments, virtual hands-on experiences, innovative ways to engage the world — and translating those elements for classroom instruction.

To be truly effective as a teaching tool, VR content has to provide meaningful interactions that align with educational standards, and all of it needs to support measurable learning outcomes. With these critical elements met, the ideal of immersive learning can be realized.

Immersive VR Content Considerations

- **Accessibility** — lesson content must support instructional continuity, whether class is in-person or online and whether some students can use a headset or not.
- **Effectiveness** — content must balance the dynamic richness of VR with meaningful learning.
- **Curriculum integrations** — content breadth needs to be sized and formatted appropriately to slot into lesson plans and coursework in a supporting role.
- **Measurable results** — the benefits of each immersive lesson need to be quantifiable in order to be properly evaluated against both the cost of implementation and the traditional alternatives of lab consumables, equipment, and field trips.
- **Ease of use** — Any new technology cannot get in the way of learning. It must be easy to manage for a teacher already tasked with managing a classroom; the IT group, which is likely spread thin already; and for students who may be easily discouraged by technology glitches.



VIRTUAL STEM LABS, ACCESSIBLE AT SCHOOL OR AT HOME

A cornerstone of VR Classroom 2's content partnerships is Veative, a leader in immersive content solutions. Veative provides an extensive library of curriculum-ready STEM, history, and culture content with built-in analytics.

The content is designed as discrete immersive lessons. For critical STEM lessons, students can complete a virtual scientific exploration lab, like a dissection, all without using costly (and for some, gross) animal specimens, lab equipment, or even being at school in the first place. Other popular subject areas for virtual reality are history and culture classes where enabling students to see world landmarks and the people around them builds on their innate compassion and colors their learning with deeper meaning. Even mathematical concepts are more easily understood when rendered in all their dimensions.

To accommodate the current remote learning situation many schools are facing, Veative has made all of these learning experiences available online without the need of headsets through WebXR. For schools where headsets aren't available during remote learning or even schools considering adding immersive technology to their curriculum tool chest, Veative's WebXR offering is an ideal solution to pilot.

Veative content is:

- Aligned to national and state standards, and for assessment options, the content is FERPA, COPPA, and CSPC compliance certified.
- Designed to improve learning retention and outcomes by enabling intuitive discovery and active exploration of the subject matter. What's more, students and teachers receive immediate feedback from built-in formative assessments, thus any learning gaps are quickly identified.
- Accessible on multiple Lenovo devices, for seamless transitions from school to home. Specifically, their WebXR content can be accessed using any computer with an internet connection, and the VR content is accessed using the Lenovo Mirage VR S3 headset.

VEATIVE

"The immersive experience with VR is really going to provide learning opportunities that would otherwise be unsafe or impossible for teachers to be able to provide."

— Mary Carson, Veative Educational Specialist and former teacher

SPARKING IMAGINATION WITH A UNIFIED PLATFORM

Lenovo VR Classroom 2 brings all the technology and content pieces together into a simple, scalable platform for immersive learning, in and out of the classroom.

Hardware

The Lenovo Mirage VR S3

It starts with the best headset for K-12, built sturdy and with a long battery life that keeps pace with busy students.

- **Easy** — Lightweight, all-in-one design
- **Simple** — Wireless controller, can be worn over glasses
- **Safe** — Sanitizable components

Content: Veative for VR or WebXR

STEM-focused content modules

- **Meaningful** — Expert-certified scope and sequence, aligned to national and state standards for grades 4 through higher education
- **Flexible** — Teacher-directed or self-study modes for both synchronous and asynchronous learning
- **Complete** — Includes 40 pre-loaded interactive VR STEM labs, simulations, and virtual tours, plus assessment options for teachers
- **Scalable** — Schools can upgrade to Veative's full content library, which includes 550 STEM labs and simulations in both VR and WebXR computer-based format

Content: Wild Immersion

Stunning wildlife experiences in Africa, Asia, and the Amazon

- **Exclusive** — Collaborative content from Lenovo and Jane Goodall
- **Empathetic** — Connects students with nature through wonder, empathy, and curiosity
- **Extendable** — additional videos available include: Wild World Tour, Alba, Aqua, The Great Apes, The Cutest Movie in the World, Terra, Treasures of Central America, Solstice & Equinox, and Jane & the Chimps

Content: Dev Clever's VICTAR and LaunchYourCareer.com

State-of-the-art career guidance

- **Engaging** — Immersive 360° gamified career training
- **Responsive** — Career engine responds to answers and customizes experiences
- **Multipath** — Includes employment growth, salary, coursework paths, and apprenticeship opportunities

Device and Classroom Management
ThinkReality and LanSchool Air

- **Unified** — ThinkReality platform allows you to deploy apps and content to a fleet of headsets and manage multiple VR device settings via the cloud.
- **Simple** — LanSchool Air classroom management platform can launch apps simultaneously and monitor student activity on each headset to minimize digital distractions and increase classroom efficiency.
- **Flexible** — Schools can easily upload, deploy, and share content they create, customizing the experience to their curriculum.

Training

Onsite or online professional development with Educational Collaborators to introduce teachers and IT admin to the VR solution. This training familiarizes participants with content and how to integrate it into daily lessons and activities.

Support

Designed specifically for middle schools and high schools, Lenovo includes a dedicated phone line, proactive case management, and escalation assistance.

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TURNING INNOVATION INTO OUTCOMES

The early successes of immersive learning prove what seems obvious, that deep learning is about more than information — it's about an experience. Lenovo is committed to helping teachers and students collaborate inside these experiences to explore, engage, and create.

But turning virtual reality hype into effective and impactful classroom innovation requires careful planning and solution choice. Districts and schools need a trusted partner to turn limited budgets into lasting change. With VR Classroom 2, Lenovo has brought together a powerful combination of hardware, content, and expertise that turns innovation into outcomes.

For more information, visit
www.lenovo.com/vrclassroom