VR & AR for Education

classvr.com
ClassVR is a complete VR and AR system for the classroom. It provides an engaging, immersive experience for students of all ages, and allows them to view and understand subjects and topics through personal experience. The immersion and engagement students gain from VR dramatically increases their ability to understand and retain information. The key benefits of VR and AR in the classroom are:

- **IMPROVED OUTCOMES THROUGH INCREASED ENGAGEMENT**
- **BETTER KNOWLEDGE RETENTION THROUGH PERSONAL EXPERIENCE**

**WHAT’S INCLUDED**

ClassVR provides all of the necessary hardware, software, tools, training and support needed to implement VR in the classroom. The ClassVR kits comprise the following:

- **Standalone VR Headsets**
  http://www.classvr.com/headset/

- **Secure Charging & Storage**
  http://www.classvr.com/storage/

- **Classroom Controls**
  http://www.classvr.com/portal/

- **Curriculum Content & Lesson Plans**
  http://www.classvr.com/content/
Adding to the excitement is ClassVR’s gesture controls; a simple way for students to navigate the interface to find, select and launch activities. Using just your hands and simple head movements you can navigate around the icons and select and launch activities. No buttons to fumble for, no controllers to hold. Find what you want, then give a gesture and you’re off!

ClassVR offers two options for charging and storage; a ruggedized portable case for up to 8 headsets, or a 36 capacity mobile trolley featuring our revolutionary UVR™ headset cleansing technology.

Both options feature fully integrated charging and cooling, helping keep devices safe and ready for use. They are easily moved between classrooms, allowing all students to share the engaging experience.
CLASSVR PORTAL - PLAN

Easily create and plan your lessons

At the heart of ClassVR is our teacher-friendly portal, providing all the necessary content and tools to successfully deliver engaging lessons to your students.

SEARCH

With a simple to use search function and pre-made collections, it’s easy to find VR and AR resources for your lesson. There are over 700 currently available, all of which are easily searchable by subject, topic or keyword.

BUILD, SAVE & SHARE

Using our intuitive drag and drop functionality, you can easily create custom resource ‘playlists’ in seconds, ready for you to deliver to your class at the click of a button.

Prepare your lessons ahead of time, then save them in your own ‘My Playlist’ Library, for easy access later.

UPLOAD YOUR OWN

The ability to create, upload and use your own content gives you maximum flexibility when teaching.

Find and upload your own VR content, including 3D models, 360 degree photos and videos, and build them into your own custom ‘playlist’.

SHARE GLOBALLY

Connect with educators around the globe by adding your creations to the ClassVR Community Library. Imagine using a 360 camera to capture your local landscape, then sharing those images with schools all over the world – and widening your students’ perspectives by bringing far-flung continents into the classroom.
CLASSVR PORTAL - DELIVER
Deliver seamlessly with simple classroom controls

LAUNCH ACTIVITIES SIMULTANEOUSLY
The ClassVR portal allows the teacher to deliver a defined playlist of resources to multiple headsets simultaneously.

A simple set of ‘play’ and ‘pause’ controls sends resources to headsets and starts experiences. Videos are sequenced so that every student will see the video at the same point, allowing teachers to describe and comment as it plays.

DYNAMIC POINTS OF INTEREST
Students can be so immersed in a VR experience, it can be hard to get their attention. With ClassVR’s dynamic ‘Point of Interest’ (POI), teachers can guide students to look at a specific part of a VR experience, by simply clicking anywhere on the 360 image that is playing. Students will see a trail of ‘breadcrumbs’ leading them to the POI.

TRACK STUDENT FOCUS
Understanding where children are looking is almost impossible when they are wearing other VR headsets. ClassVR’s innovative focus tracking feature allows teachers to see exactly where student attention is directed. Our unique ClassView functionality gives you the ability to see ‘through the eyes’ of each student allowing you to view what they are seeing, on an interactive display.
ClassVR is an open platform, supporting Virtual and Augmented Reality curriculum content. It allows students and teachers to create, upload and share their own content, creating a collaborative community of global educational resources.

The ClassVR portal includes access to a vast library of pedagogically sound, curriculum aligned, engaging VR & AR content, along with downloadable structured lesson plans, guides and worksheets. The portal also provides access to our community of content created and shared by teachers around the world, as well as exciting partnerships with great VR and AR educational content publishers.

**VIRTUAL REALITY CONTENT & RESOURCES**

Our Virtual Reality resources and structured lesson plans help to spark the imagination of students, leaving them with memories and experiences that help them visualise and understand even the most complex of educational subjects.

There are currently over 700 pre-made activities, instantly accessible and covering a huge range of topics and curriculum subject areas, with teachers able to add their own resources, such as 360 degree photos and videos, and build their own engaging lesson plans.

The ClassVR portal is continually evolving and you will receive brand new VR and AR lesson plans and content every month!

**360° VIDEOS**

Our growing library of 360° video content takes immersion to the next level. Each video has been carefully chosen for its educational benefit; go swimming above a coral reef, visit the summit of Mount Everest, take a guided tour of London, witness a solar eclipse, or get into the carnival spirit in Rio de Janeiro! Get ready to take your students deeper into their learning as you deliver video simultaneously to all headsets, keeping everyone focused and on-task. Pause the video on your teacher’s portal, and it will pause on your students’ ClassVR headsets – a perfect way to leave space for discussion or draw attention to specific learning points.
AUGMENTED REALITY CONTENT & RESOURCES

Augmented Reality brings educational content to life, allowing students to view and interact with exciting 3D models, providing greater engagement, understanding and ultimately knowledge retention. The ClassVR headsets include a front-facing camera and our proprietary ARC (Augmented Reality Classroom) app, so students can get up close and personal with content, such as a beating heart, simply by looking at one of the worksheets.

ARC is built into the ClassVR headset interface. Once running, students can see their normal surroundings, but when they look at the ARC trigger images on worksheets or posters, the content comes to life, delivering interactive 3D models, such as machines, historical artefacts, planets, blood cells and many other exciting educational resources.

MIXED REALITY

Mixed Reality brings a new dimension to students - physical interaction. Blending virtual objects with real world views, our Mixed Reality content allows students to physically interact with a huge range of exciting 3D models. Hold a human heart in your hands, get up close and personal with a black widow spider, or step inside a medieval house.

3D models can be viewed directly in the ClassVR headset and launched easily from the teacher’s portal. Move your head to see the model from all angles. To really bring the model to life, use our innovative ARCube; bring it into view and the 3D model will attach to the cube, allowing you to manipulate and view the model exactly as if you were holding it!
EMPOWERING TEACHERS AND STUDENTS TO CREATE AND SOURCE THEIR OWN CONTENT

CREATING 360° PHOTOS AND VIDEOS

One of the most exciting things about any new media is the possibility of making it your own. The ClassVR system has been designed to work with standard file formats, so your students can experience the thrill of taking a 360 degree photo or video and sending it straight to the headsets. Imagine bringing your field trip back to life just as soon as you return to the classroom, or empowering students to create their very own guided tours and innovative photography.

The content possibilities are endless; ClassVR also enables schools to easily upload the thousands of 360 degree images and videos available online. Teachers and students alike are getting excited about the creative possibilities across the curriculum, and with 100GB of cloud storage included, the process of capturing and distributing 360 content couldn’t be easier.

CREATING 3D MODELS

Why stop at creating your own 360 images and videos? ClassVR’s built-in camera opens up possibilities for Augmented and Mixed Reality, and you can now add your own 3D content with the click of a button. Simply build a 3D model, convert to a supported file format and upload. Microsoft Paint 3D files are fully compatible, so even young students can easily build a 3D object. Within minutes, that object can appear in front of their eyes – or in the palm of their hand with ARCube.
Curriculum-aligned Virtual & Augmented Reality Content

Curriculum-aligned Content for the Entire ClassVR Community

The VR and AR content has been curated by classroom teachers and collections have been created to make sourcing the right activity as simple as possible. Teachers can build and save playlists, amalgamating their own content with the 600+ activities prepopulated in the ClassVR portal. Playlists can be submitted to the ClassVR community and once approved, they can be accessed by all users, creating a huge bank of community generated content for teachers to access.

Content Partners

We’ve teamed up with selected content partners to make exciting new content available to your students.

CoSpaces

Build and code whole worlds using the innovative drag-and-drop system from CoSpaces, then send them straight to your ClassVR headsets. Imagine the creative possibilities: get students using their reading skills to make a story setting, or applying their programming skills in an open environment!

Our partnership with CoSpaces means your students can load their 3D worlds directly inside a ClassVR headset, then move around and interact with a simple button press. What better way to debug your CoBlocks, Blockly or Javascript programming than to try it out for yourself in immersive 3D, simply by scanning a QR code?
Case Study | St Wilfrid’s Academy

Using ClassVR to Drive Progress at St Wilfrid’s

Serving the Borough of Blackburn with Darwen and parts of Pennine Lancashire, St Wilfrid’s Church of England Academy places a strong emphasis on engagement for all students. The staff are committed to embracing modern technology to maximise learning, making them an ideal Pioneer school for ClassVR.

Nathan Ashman, St Wilfrid’s Lead Teacher for New Technologies, is always on the lookout for how modern technology can enhance and enrich students’ learning experience.

“Ever since the emergence of virtual reality and accessibility of it through smartphones, I’ve been eager to use it in a classroom situation. What ClassVR allows us to do is take students into another environment anywhere in the world. What’s great about it is that they can experience that environment in full 360, looking all around them so that they can imagine themselves actually being there. This has a huge impact on their retention of information and their learning experience because they are having a real experience while they’ve got the headsets on.”

Independent Learning

Immersive learning is really moving forward in schools. The students aren’t just isolated in their own immersive world, they’re putting the headsets on then taking them off and talking to each other about their experiences naturally because they are keen to share this with people around them.

ClassVR provides a whole virtual reality solution which is both accessible and easy to use. It is also flexible in that, as a teacher, you can lead your students through a particular topic or you can allow students to navigate themselves, dipping in and out of experiences as they choose. It’s good to give the students a little bit of autonomy in what they do but at the same time as a teacher it’s nice to know that you still have that control.

Teacher Management Portal and Adding Personalised Content

The portal is very easy to use: you can just drag and drop activities you want to use and there is an amazing amount of content on there to choose from. We want to make our curriculum specific to our students so being able to put our own content on there really makes it more purposeful and relevant.

We’ve been fortunate enough to get a 360 camera so taking images wherever we are is relatively straightforward. Once we have those images, we just upload them to the portal where they are ready to use. If, for example, we were to go to place of worship and take some images there we can then take that back to the classroom for students to see in all year groups rather than just those that went on the trip.
Gwen Rees, Assistant Principal at St Wilfrid’s, was sceptical at first about using ClassVR with her students but now sees it as an invaluable resource in the classroom.

**DRIVING PROGRESS**

When Nathan came to me to ask about using ClassVR headsets with my students, my initial reaction was unease and worry. The idea of having these boys in a space with technology was quite daunting. I'm a bit of a technophobe myself and I was concerned about behavioural issues that could arise. It turned out that I didn’t need to worry. The boys were so engaged and excited about using this technology that there were no issues with behaviour.

From the second you open the box and show students the headsets, it creates an amazing buzz around the classroom; they’re excited to get involved. I’ve used ClassVR with my Year 8 boys, a lower-attaining Literacy group, when introducing them to war poetry. I knew that this was going to be a very daunting task; the vocabulary in the text was going to be extremely challenging for them.

When I placed those boys within the trenches in that virtual reality space, they were able to answer a lot of their questions themselves, they were making connections and they could really understand what it would be like to be in those trenches. Then, when I introduced the poetry, the students had a level of empathy and understanding that they wouldn’t have had without that experience. Their writing about those poems clearly demonstrated the progress that they’d made.

**DESIGNED FOR THE CLASSROOM**

ClassVR is different because the package is complete, there’s no need for mobile phones which means that the students can pick it out the box and use it straight away.

If you’re at all unsure about using this technology in the classroom my advice would be have a go yourself. Put on the headset and see how this would captivate your students.
CASE STUDY | BARRY ISLAND PRIMARY

USING VIRTUAL REALITY AS A STIMULUS TO STORY WRITING IN PRIMARY SCHOOL

My name is Dominic Broad and I’m a Year 6 teacher at Barry Island Primary School in South Wales. Our school has a strong history of using innovative teaching tools and methods to ensure we provide our children with the very best opportunities and experiences.

Over the past few months we’ve been experimenting with some new and creative methods to engage our children within the classroom. Through using our recently acquired ClassVR headsets, we’ve found a vast improvement not only in children’s engagement with learning, but in their motivation to both plan and write a story.

USING EMOTIVE LANGUAGE AND ADVENTUROUS VOCABULARY

Children are quite often expected to compose adventurous tales or stories using a range of exciting vocabulary and descriptive words – but how can they realistically be expected to describe a scene if they’ve not experienced it? In the majority of cases, we rely on their imagination or photographs that the children may have seen from a film or book.

We decided to experiment with exposing the children to these various experiences, by using our virtual reality headsets as a stimulus to the writing. From the very first lesson, we found that it really helped the children with using descriptive and emotive language – they found it much easier to use a diverse range of adventurous vocabulary when setting a scene in their stories, once they can understand what a particular place actually feels like to them.

The short descriptive text exercise shown here initially uses word banks and a shark photograph as a stimulus. Although the work seen in the first photograph shows that the child selects vocabulary in keeping with their expected age, they are not writing emotively. They cannot relate to the situation as they’ve never experienced it first-hand.
Immediately after using the virtual reality headsets, we see an impact in the child’s writing. They now ‘swim nervously’ instead of ‘happily’ and the entire encounter with the shark is far more ‘up close and personal’ due to their freshly gained experience.

Having been initially a little sceptical about the impact this may have on the students work, we soon realised that teaching the children to relate their writing to a scene, and providing stimulating experiences for this, is just as important as teaching the skills of storytelling and writing.

In summary, we’ve seen a big impact in the diversity and quality of written work when our students are using ClassVR to inspire their writing. We endeavour to provide learning experiences for our children, and are convinced that ClassVR is a fast and easy way to provide rich experiences to students of all ages.

The key to unlocking any child’s success during school can be measured in their engagement and enjoyment – the children of Barry Island Primary School certainly enjoyed this lesson!
During our topic on WWI, year 5/6 pupils used the VR headsets to experience life in the trenches. Pupils had previously researched WWI and trench life using books and the internet but the prospect of using virtual reality really excited them. Right from the start pupils were engaged, focused and eager to ‘experience’ the trench.

The children were given one headset between two. The idea behind this was encourage the partner without the headset to ask questions about the experience, such as ‘What can you see?’ ‘What can you hear?’ ‘What colours are there?’ This child would be curious because they could not see what their partner was experiencing and would need to build an image in their mind purely from their partner’s description. With added prompting, the child with the headset on was also encouraged to think more deeply about the experience by being asked ‘How would you feel?’ ‘What would you be thinking about?’ Whilst one partner experienced the trench, their talk partner scribed ideas and vocabulary, and then roles were swapped. This enabled the children to create a bank of rich vocabulary, focusing on sights and sounds of the trench and considering soldiers’ thoughts and feelings.

As class teacher, I was able to guide the children to different sights and ask them to focus on different sounds. It was far easier...
for children to describe these real sights and sounds and having their partner there to record their responses, children were encouraged to use figurative language to help create an image in their partner’s mind. As various points, we stopped and discussed ideas and thoughts. The vocabulary the children generated was absolutely incredible - including superb examples of similes and metaphors - and they could really get a feel of what the trench life was like. Using the VR headsets meant they were able to better empathise with soldiers and this was reflected in the standard of their final letters home from the trench. The children all loved the task and agreed that actually experiencing the trench really helped them to visualise and imagine life in those conditions.

**MOON LANDING**

Suddenly, a rapid wave of cold, icy air rushed over me, as my space shuttle landed onto the powdery surface of the moon, creating a floating cloud of grey dust. Excitedly, I leapt out, amazed at the weightlessness feeling. The jagged ground crumbled beneath my feet. My dark shadow slithered silently behind my light, crunching footsteps. Not even the slightest form of life could be found on this bare and deserted landscape. As I curiously gazed around me, the moon was as blank as a plain sheet of paper. Bumpy, towering cliffs cast creepy shadows - pitch black like dark lumps of coal.

For this piece of work we used a CGI virtual reality image of a rover on the surface of the moon. Now that the children are more familiar with using the headsets, they slipped instantly into their roles as talk partners (these are mixed-ability partnerships, so each student’s strengths and weaknesses were complemented). One partner wore the headset and described everything they could see on the moon’s surface, while the other partner acted as a scribe. This approach is particularly helpful for those students who find writing difficult – they could practise their verbal skills and really get creative with vocabulary, while their partner listened and noted down key words and ideas. Difficulty in recording ideas can really put some children off writing, creating a huge barrier to learning. The combination of an exciting stimulus, which they instinctively want to talk about in great detail, and a partner to write down ideas is extremely powerful and managed to engage even our most reluctant writers.

Later on, these notes were invaluable when it came time for the writing session. Students wrote poetry from the perspective of an astronaut on the moon. Their virtual reality experience had given them all sorts of details about textures and colours which emerged in their writing; it allowed them to consider what objects or senses reminded them of. The ability to use their beautiful words and ideas, in combination with visualising that striking experience they’d had earlier, had a noticeable impact on the quality of writing.
CASE STUDY | CROWLANDS PRIMARY SCHOOL

USING CLASSVR TO BOOST ENGAGEMENT

Crowlands is a larger-than-average sized primary school which serves the London Borough of Havering. It became a ClassVR Pioneer school back in March and since then has invested in three more class sets to boost engagement across the school.

FIRST VIRTUAL TRIP

“Before the first box of headsets was introduced, both staff and students were excited but unsure of what to expect. With just eight headsets for the class, there was plenty of sharing to be done. However, the children took this in their stride. It didn’t feel like just eight children were engaged in the session. They instantly started talking to each other about what they had seen to involve everyone at their table. Through language they were sharing their experiences, creating a fantastic buzz in the classroom.”

IMPROVING QUALITY OF WRITING

“After their introduction to the technology, Anthony Isaac, Crowlands’ Computing Coordinator, was eager for more:

We gave the children an experience of swimming with sharks or diving underwater around Amedee Island as a stimulus for quick writing activities to see the impact it would have. The greater submersion in the experience allowed them to describe the settings in much greater detail as most would not have been to those environments before and therefore would not have that experience to draw from.

Students worked in pairs and were told to write down notes as they looked around their virtual setting. I encouraged them to jot down anything they could see, collecting adjectives they could use to describe the scene but also to be creative when using this to help imagine what their other senses would be able to detect. What might they be able to hear, smell, taste or touch if they were there? Finally, they were given just 20 minutes to describe a scene, imagining they were scuba diving.

The kids responded incredibly well to the technology, navigating the headsets with ease and, most importantly for this activity, were really excited to write after their experience. Even though they could just see the VR world, the submersion in the setting kick-started their creativity as they thought of other details using other senses. The total plunge into this new environment also gave them the ability to see small details and create better description and imagery. Their response was extremely enthusiastic, writing with an increased concentration because of how engaged they were in the stimulus.”
Since then, staff have been really excited about using ClassVR across the curriculum. I have seen VR and AR lessons across a number of year groups and subjects:

Year 6 have used augmented reality to get a closer look at dinosaurs for their science topic;

Year 3 have used VR to travel back in time for their history topics, getting a different experience of the Stone Age and Ancient Egypt;

Year 5 have used the headsets in science to gain a better understanding of our solar system, looking at how the moon rotates around the sun as well as a going on a trip to the Milky Way.

Not only does the technology immerse children in the topic, getting them to wonder, ask questions and become excited to learn more about it, from what we’ve seen at Crowlands, it manages to ignite a spark in those children who ordinarily wouldn’t get excited about that particular topic or subject.

The school has already seen a huge positive impact of ClassVR and staff are using it creatively in a variety of subjects to boost engagement, getting the children to drive the learning forward. It is exciting to think where this will take them next and I’m sure the children can’t wait to find out where their next virtual school trip will take place.

To see more exciting examples of how ClassVR can be used to teach visit:

www.classvr.com/case-studies
Discover other exciting educational technology at www.avantiseducation.com