

# VR/AR Applications in Education

The earliest and most common application of VR/AR in education is as a virtual tool for real-world learning. In general, learners remember far more about something through direct experience as opposed to just reading, seeing, or hearing about it.

VR is applicable at all levels of education – from primary schools to universities. The key is setting up the virtual reality content so that it is appealing to the target audience.



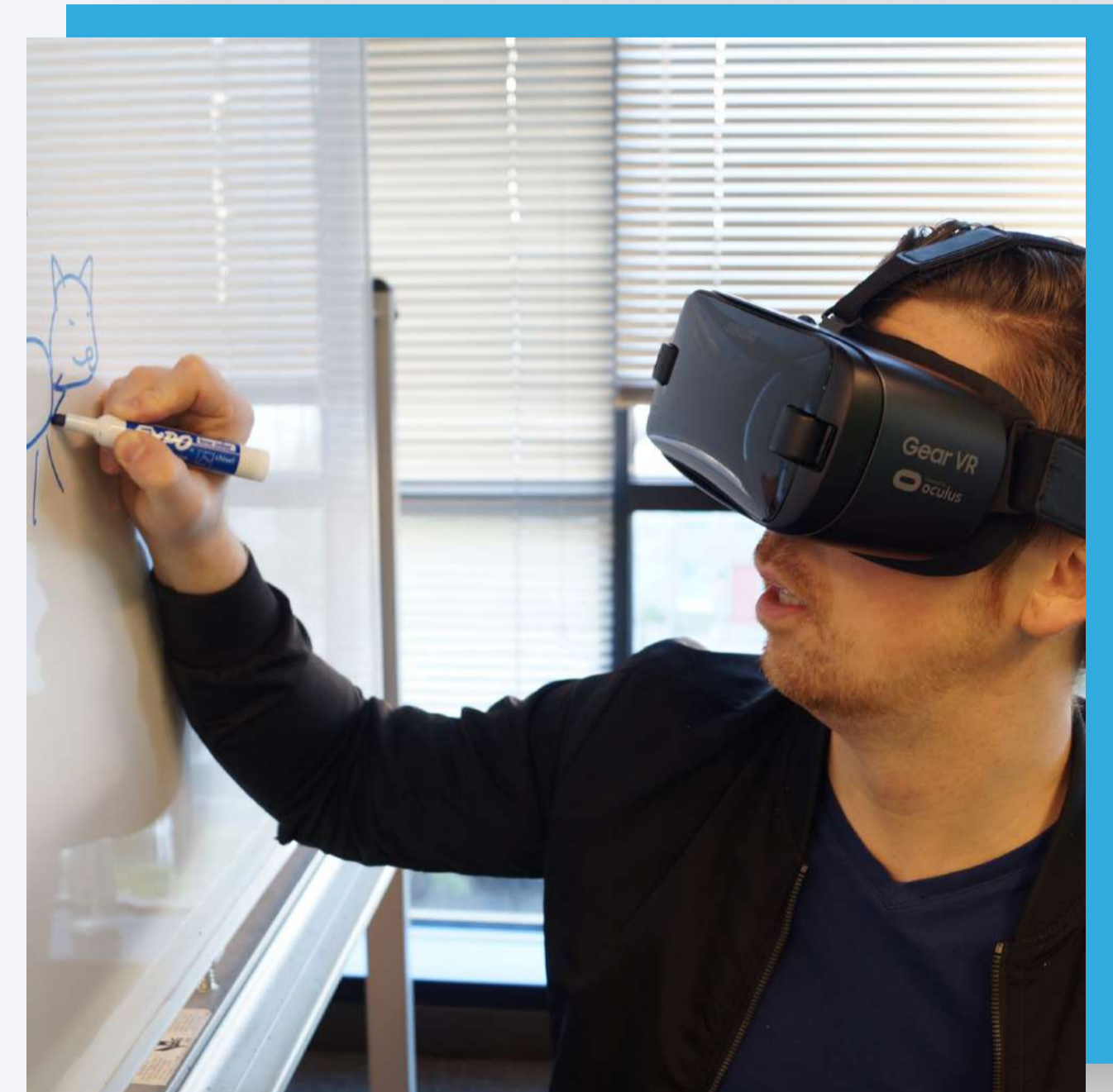
Depending on the age of the students and the subject, VR lessons can put the focus on different areas:

- **Geography:** virtually visiting geographic locations and habitats.
- **History:** virtual recreation of historical sites.
- **Science:** virtual traveling into space, exploration of the human body, and safe experimentation with chemicals.
- **Technology:** a virtual tour of machines and engineering projects.
- **Art and Culture:** attending cultural events in VR and learning to paint, sculpt, or do pottery in VR.
- **Architecture and Design:** the creation of architecture projects in VR, and visits to celebrated buildings.



## VR & AR Education can be classified into:

- Virtual Classroom
- Virtual Field Trips
- Special Education VR
- VR Labs
- AR in Education





## Virtual Classroom

Online courses and online classrooms have proven to be ineffective means of learning. One of the main challenges is the high dropout rate. The most common reason for this is the lack of student engagement.

VR classrooms, on the other hand, give students opportunities to raise their hands, ask questions organically, and feel more directly invested.

VR education makes learning experiences social, by allowing students to communicate with each other as well as the teacher.

Using avatars and mapped facial expressions, students can come together to discuss and collate information, and learn from one another.

## Virtual Field Trips

With the help of VR field trips, students can visit places they have never seen before and which school expedition organizers could never, due to the cost, arrange in the real, physical world. Students can, for example, take a VR tour of Tokyo to get a sense of how people interact there.

Similarly, during a class about oceans and ecosystems, students can take a virtual swim through the coral reefs. With VR and AR, teachers are no longer limited by the classroom walls.

VR lets students explore the world virtually, allowing teachers to guide students through collections of scenes and objects, and to point out interesting sites and artifacts along the way.





## Special Education VR

For people with physical disabilities, studying and exploring the world through a VR headset is a great option. Both AR and VR increase motivation, facilitate interaction, develop cognitive skills, and improve short-term memory.

Lessons become more enjoyable. The most profound effect lies in the improvement of communication skills, especially in students with hearing problems. For autistic students, VR seems to encourage social interaction.

VR has also been effectively used to tackle social anxiety, language deficiencies, attention deficit hyperactivity disorder (ADHD), physical or motor disability, cognitive deficits, dyslexia, and Down's syndrome.

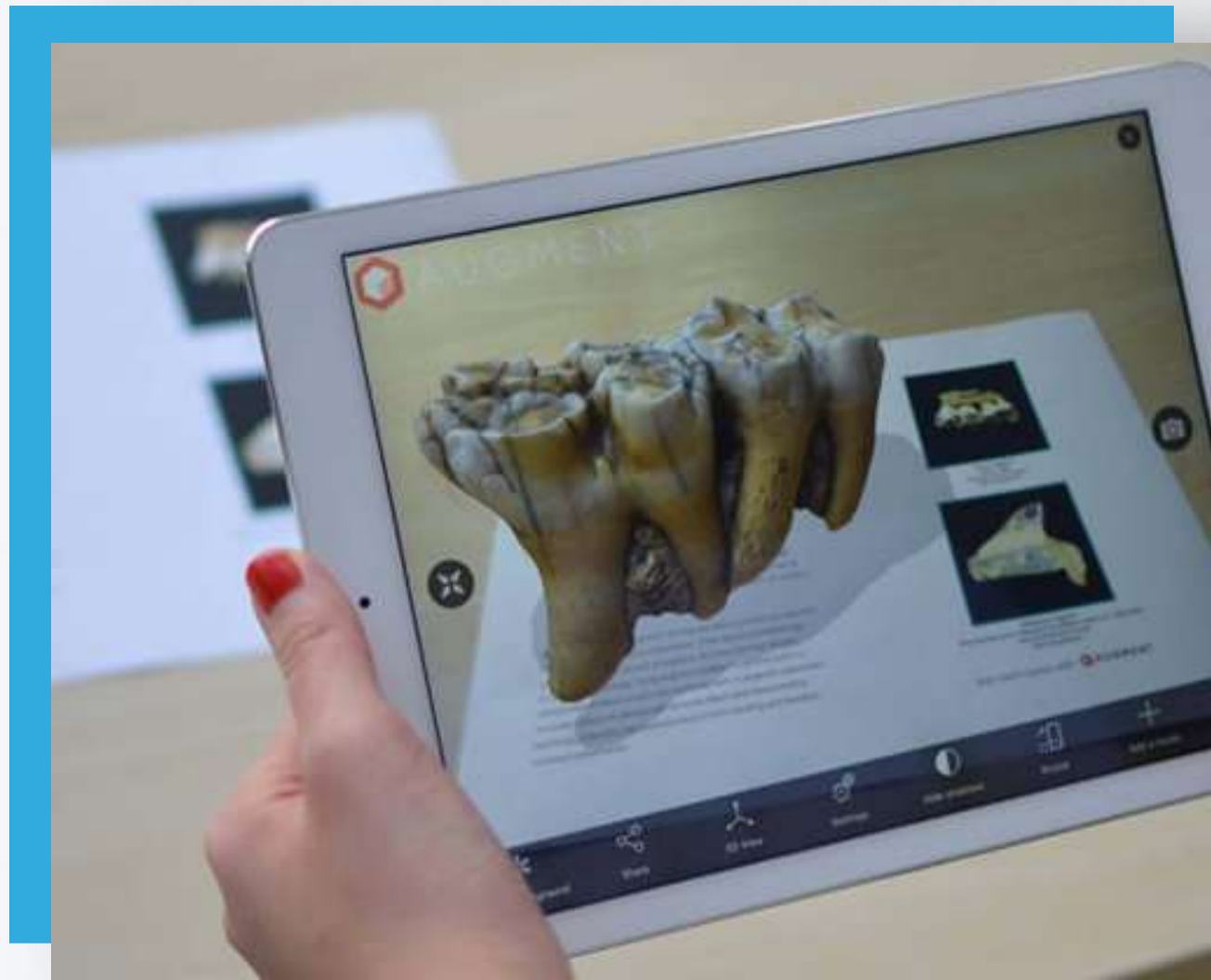
## Virtual Labs

Science students need hands-on time in a lab to master the different skills and techniques they are taught in class. State-of-the-art labs, where hands-on STEM learning takes place, are often difficult to access and costly.

VR technology offers a realistic lab experience that lets users perform experiments and practice skills in a fun and risk-free learning environment.

VR labs have many opportunities not available in regular labs, such as the ability to view life science at the molecular level, to examine scenarios that highlight the connection between the lab experience and the real world, and to speed up experiments so results can be seen faster.





## AR in Education

The hardware for AR learning may be pretty basic, such as smartphone cameras for playing the popular Pokemon Go game. Yet, the hardware in AR glasses like Epson Moverio and Vuzix Blade are arguably more convenient (and more expensive) for delivering AR to consumers.

AR in education and training has a wide array of uses and enables its adopters to learn-on-the go using real-time instructions.

Despite a common misbelief, AR technologies offer so much more than chasing pokemon around town.

Here are some examples of AR in education.

- AR Apps for Kids
- AR in the Classroom
- Distance Learning

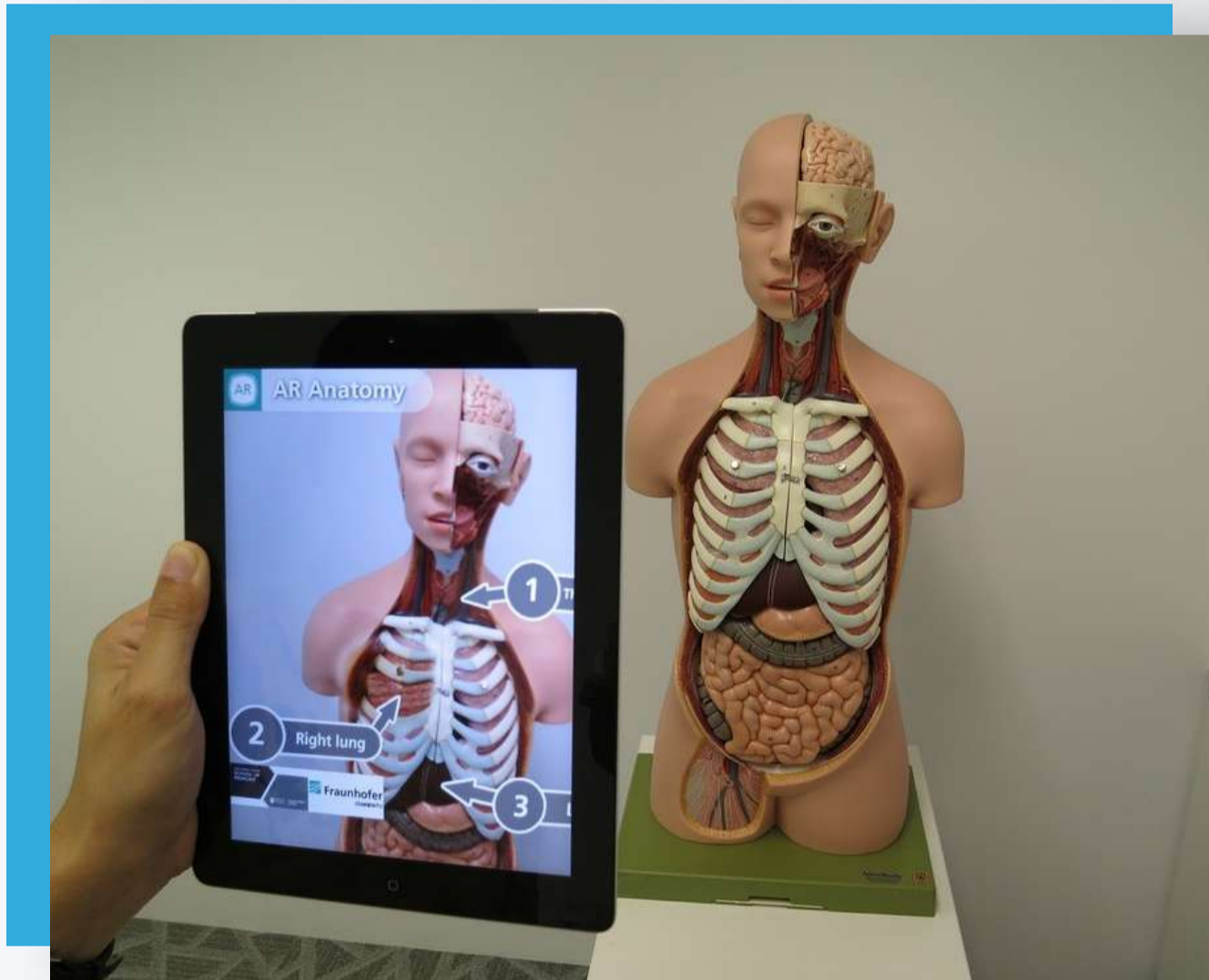


## AR Apps for Kids

It's no secret, kids are eager adopters of groundbreaking technologies like AR. Some of the most ingenious AR education apps can be made for the youngest of users.

AR Apps can be built that can change the ways children read books, look at art and posters, learn science, and conduct classroom lab experiments.





## AR in the Classroom

Probably, the most popular application for AR in education is the use of AR apps directly in the classroom.

In this case, they can help the teacher explain a subject, provide a visual representation of the material, and help students test out their knowledge in practice.

AR apps can be built for almost any subject, including chemistry, geometry, zoology, grammar, and even programming.

## Distance Learning

By using AR, students can learn even outside the classroom. What's more, online or distance learning can be easier and more efficient with AR-aided educational materials.





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