Virtual Reality - Opportunities and Challenges by R. D. Gandhi and D. S. Patel

Virtual Classroom and Virtual Reality by U. Kanjilal

Virtual Reality in Education
http://www.egyankosh.ac.in/bitstream/123456789/41873/1/Unit-18.pdf
Virtual reality can assist students to become immersed in a learning environment where they can participate in their own learning in a technology based environment. While traditional notions of learning tend to focus on purely intellectual skills, VR can successfully be used to support complex understanding by stimulating and exploring all human senses. It may further be used as a means of enhancing, motivating and stimulating understanding of certain events, especially those for which the traditional notion of instructional learning have been found inadequate or difficult.

http://www.ijsdr.org/papers/IJSDR1811009.pdf
2 types of virtual reality

Non Immersive VR:
        A non immersive framework would have the client be aware of their real world and simultaneously be invested in some virtual environment such as a presentation on a workstation.

Immersive VR:
         an immersive framework replaces our views and computerized images and feelings. A headed amount display can provide some sort of immersion. To be completely immersed one must feel a part of the earth's essence (movement).

Some devices that can enhance VR are:
- Head Mounted Display
    - Is a gadget like a cap or a face mask that provides the wearer visual and sound related feedbacks. The implementation of stereoscopic view allows images to appear 3D. Equipment can range from $20 to $1k.
- Cave
    - Basically the client is enclosed by four projection surfaces in which those surfaces are projecting pictures. Allows client to connect with virtual world and the full feeling of immersion
- Gloves (manus gloves)
    - Allow more in depth interaction with objects such as pick-up and releasing.
    - Accurately applying forces on objects
    - Ability to feel and apply pressure will help the client's understanding of the virtual environment
- 3D mouses
    - Is used by your non-dominant hand. The mouse is used to pan, zoom and rotate 3D content while your other mouse is to select and move model.
- Space ball

- Similar to a 3D mouse it allows rotation and movement of objects
- Voice recognition
    - Machine recognizes the user's voice input and output something
- Biological sensors
    - Help stimulate our senses such as physical feelings.
- Full body suits
    - Maximizes the immersion that one can be in in a virtual reality environment, cost $1.8k

Findings: VR equipment are quite prevalent and accessible for users however to have full immersion one must spend more on the equipments.

https://www.androidauthority.com/virtual-reality-work-702049/

VR can go up to 4-5 senses such as your: touch, vision, smell, hear. Stereoscopic display is what makes VR special. By presenting two slightly different angles, it tricks eye that there is depth. For seeing, headgear that gives stereoscopic display should be able to emulate a virtual environment. In terms of hearing, a spatial audio is required. Spatial audio is 3D audio in which virtual sound is placed in different angles simulating a virtual reality. When it comes to hardware that is able to run Virtual reality. Android OS kitkat 4.4 is able to run standard VR. This was in 2013, so any phones after 2013 should be able to run any standard VR.