GUIDELINES FOR USING VR IN THE CLASSROOM

PREPARING THE 3D CLASSROOM

The 3D VR experience in U.S. schools is emerging as an engaging and effective learning tool for the classroom. Still, some students are simply not able to view 3D (perhaps 5-20% of the general population; thus, encouraging parents/students to seek eye examinations will prove helpful in this regard). Eye strain/fatigue (asthenopia) and visually induced motion sickness (VIMS) will affect some students. Still, some discomforts can be reduced or eliminated by ensuring that in your 3D VR classroom, you:

- use only high-quality, slow-moving 3D VR content
- warn students to avoid rapid body and head movements
- provide ‘spotters’ for students so they don’t collide with furniture or others
- offer comfortably fitting 3D VR headgear (neither too loose, nor too tight)
- employ the effective teaching strategies (identified below)

SUPPORTING THE TEACHER: TIPS FOR TEACHING WITH 3D VR

- Always **preview** 3D VR lessons
- Set **expectations** for your students about appropriate 3D VR classroom behaviors (e.g., slow movement, adequate space, communicate to the teacher if feeling uncomfortable)
- Identify any potential student eye/health issues in advance with a small **test run**
- Use 3D VR in shorter segments, rather than for an entire class period
- As you teach, check with students to ensure they are having a comfortable experience
- Experience shows that if one student makes a comment about being sick or feeling dizzy, others will chime in. Try to **distinguish** actual issues from “copy cat” issues.
- Disinfect your 3D VR headgear frequently before/after viewings, e.g., antibacterial swipe, handwashing (before), UV cabinet

ENSURING STUDENT COMFORT WITH THE 3D VR EXPERIENCE

- Ensure students have glasses off until the simulation is ready to view
- Students may need to wear their corrective glasses **under** their 3D VR headgear depending on the perceived content viewing distance
- If a student is uncomfortable with 3D VR, have them view the content in 2D—without the headgear—holding the device **farther away**, since distance reduces visual effect

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If a student is feeling nauseous, immediately have her close her eyes for ten seconds or look at a distant object (This relaxes the extra-ocular and ciliary muscles in the eye)

If getting up to move, students should always remove VR headgear before standing up to eliminate any possibility of vertigo

Students with problems who really want to see 3D VR should consult with a certified optometrist/vision therapist. (In most case, comfortable 3D VR viewing can be acquired with focused practice under the care of a professional.)

**DUE DILIGENCE GUIDELINES**

Follow your district guidelines for students with physical challenges related to sight and viewing

Encourage parents/students to arrange eye examinations with their optometrist or vision therapist if they have ever experienced problems while viewing 3D VR

Have parents sign a permission form for viewing 3D VR (and keep it on file)

There is some evidence to suggest that the effects of maintaining artificial stereopsis, such as when viewing a 3D film in the cinema or participating in a 3D classroom, take a little while to ‘wear off’. It is advisable, therefore, for educators to plan for a period of five to ten minutes at the end of each 3D class, in a comfortable visual environment, during which the students can readjust to normality.

Note: declarations of the experience of nausea are ‘psychologically contagious’ (like yawning) within groups of people, and thus need to be managed. Mirroring can become unnecessarily disruptive.