

# Quality of Education in Virtual Reality Rubric (QUIVRR)

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This is shortened version for the Web.

The entire chapter gives the pedagogical reasoning behind each item. After the rubric is a more in depth description of the item and some examples for the numbering system.

As of 2020, this is a work-in-progress and the author appreciates any feedback at:

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The Catch a Mimic game can be found at <https://www.embodied-games.com/games/natural-selection-catch-a-mimic/>

Notes before using QUIVRR:

*Double Barreled Responses.* The primary user for this rubric is a teacher trying to decide between, or to justify to others, the choice of an educational module. Teachers are busy. We acknowledge it is cleaner to avoid queries with more than one construct in a single item response, but that would result in more than 30 items, making this rubric more burdensome. Thus, users are sometimes asked to make judgments about *both* quantity and the quality with a single score. (Survey design hawks just need to take a deep breath.)

*Whole Integers.* Users can add .50 if they choose. We do not want you to overthink precision though. This is modeled on a short and easy 20-item rubric for “Cognitive thinking skills in videogames” published by Rice (2007).

**QUIVRR: Quality of Immersive VR in education Rubric**  
 Module Title: \_\_\_\_\_ Hardware \_\_\_\_\_

M.C. Johnson-Glenberg, In general: 0 = not present, 1 = low, 3 = moderate, 5 = high

<b>A: Pedagogy/Content</b>	<b>Notes</b>	<b>Score (0-5)</b>
1. Clear <b>learning goals</b> stated: Does module align well with learning objectives and critical thinking standards?		
2. <b>Suited to immersive VR:</b> Is content enhanced by 3D and/or increase in presence?		
3. Does module supporting higher level “ <b>transformative learning</b> ”? See notes on the SAMR model and using technology optimally		
4. Is <b>scaffolding</b> present? Does module build up in complexity		
5. <b>Active learning: Quality Only</b> Could include user-driven choices and body movements; agency is included, learners kinesthetically practice learning goals		
6. <b>Actions congruent to, or reinforcing of the content?</b> Is there an authentic match between actions and agency and learning		
7. <b>Guided exploration:</b> Is there a beginning tutorial? Module should not be totally free exploration, some guidance included		
8. Prompts for <b>metacognition:</b> Think about thinking; are there chances for reflection built in (could also include outside of HMD prompts, working with a partner? Etc.)		
9. <b>Corrective feedback:</b> Given appropriately during activity		
10 <b>Assessment:</b> Either in headset or afterwards – more sophisticated than simple t/f		
<b>B: Mechanics</b>		
11. <b>Designed for comfort:</b> Amount of Text and Eye Strain. 0 = too much text/small objects to track, 3 = moderate amount of text, efforts made to keep comfortable, 5 = very minimal amount of text		
12. Induction of <b>cybersickness:</b> 0 = Highly likely to lead to nausea & disorientation, e.g., rollercoaster; 1 = more than somewhat likely, 3 = perhaps over extended time, 5 = Highly unlikely to lead to nausea & disorientation		
13. Content is <b>interactive and manipulable: Quantity</b> Frequency and type of manipulation (relates to item 5)		
14. <b>Avatar creation:</b> Has multiple aspects under user design		
15. <b>Avatar in play:</b> Movement match to user gestures, control and ease over gestures. (If module is all 3 <sup>rd</sup> person POV, but hand controls well-mapped=2)		
16. <b>Overall interface</b> and ease of use: Interface intuitive and easy to navigate		
17. <b>Sound</b> and its quality: e.g., ambisonic, not distracting		
18. <b>Haptics/Other modalities:</b> Beyond visual and auditory stimuli, e.g., vibrotactics well-integrated		
19. <b>Engagement:</b> Holds attention, not repetitive		
20. <b>Overall module quality/Other:</b> What you care about that is not listed - design aspects, does it avoid gender/racial biases, creative use of low poly, etc. Write in notes.		
<b>Subtotal</b>	<b>Subtotal</b>	
<b>C: Bonuses</b> (Optional - These should be the norm in several years.)		
21. <b>Adaptive:</b> Scales with learner’s performance		
22. <b>Collaborative:</b> Multiple users in same synchronous space		
<b>Final Score</b>	<b>TOTAL</b>	

