Ease of use of a Pedagogical Tool With Virtual Reality Through a Simulator Based on "Serious Games" and Digital Twins for pre-Clinical Training in Different Emphases of Dentistry

Objectives: The development of an immersive virtual reality (iVR) tool as a serious game related to dental manual precision processes that demand fine motor skills allows the dentist to be immersed in a training atmosphere in which it can be developed dexterities through repeated attempts that would lead the execution of ordered stages of a rehabilitation teeth drill and in a controlled disruptive environment that could impact and leverage new practice methods. A (iVR) allows geometries (haptically, proprioceptive) and visible/audible stimulus (proxemic, synesthetic and chronemic).

Methods: A waterfall tech splitted into different stages and developed in order of priority were used. Prototyping is also used with the development of most complex and abstract parts in separate projects and then implemented in the main one. Unity was used as a graphical engine with C# programming for subsequent deployment to Android version for Meta Quest devices. We implemented design software (Adobe Photoshop, Adobe Illustrate, Adobe Audition, 3D software Blender). Software is developed with penalization zones (gum, pulp, neighbor teeth) that improves control of collateral variables in situ. After each immersive practice, a group of trained students (20 females and 20 males), were asked to complete a visual analogue scale (VAS) questionary to answer between "0" to "100" scale several topics: comfort, stability, satisfaction, usability, comprehension, future potentiality, and similarity with real experience.

Results: They will be presented after data recollection and statistical analysis in the event in May 2024.

Conclusions: A (iVR) ambiance has disruptive advantages as a tool in dentistry: enjoyable, reduction of training costs (materials, equipment, services, and consumables), and control different work stages and progress in a repeated, orderly, systematic, and personalized way (grading each attempt), which allows measurable evolution under clear and well-defined criteria. Environments used by youth would mean greater identification by empathy with contemporary electronic and digital skill.

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SESSION INFORMATION

Poster Session
Abstracts Presented at 2024 Colombian Division Meeting