

Virtual Embodiment for Character: A Theoretical Framework for Developing Interpersonal, Intrapersonal & Intellectual Skills In Students

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The acceleration of technological change brings with it both an uncertain future and the opportunity for technology-enhanced learning. As educators to prepare students for this uncertain future, character is a vital learning objective necessary in education. While the term character appears elusive, it can be organized within the 3 dimensions of interpersonal, intrapersonal & intellectual skills each associated with consequential outcomes (Park et al, 2017). However, character competencies are challenging to intentionally cultivate, despite being critically important to social & emotional well-being, as well as achievement. In response to this challenge, the author proposes that virtual reality (VR), an emergent technology in education, can be applied to develop interpersonal, intrapersonal, and intellectual skills in students.

VR affords several learning benefits, some of which we might not even be aware of yet. The model, Learning in 3-D Virtual Learning Environments (3-D VLE's), summarizes distinguishing characteristics of VR and corresponding learning benefits; these benefits are spatial knowledge representation, contextual learning, collaborative learning, experiential learning, and engagement (Dalgarno & Lee, 2010). The author built immersive virtual environments, investigated design strategies to afford experiential content delivery in education, and tested application in the classroom. To encourage experiential learning, a VR experience was developed to simulate pearl diving, which is relevant to the Qatar history curriculum. To increase emotional engagement with immersive content, the author applied unexpected shifts in 3-dimensional audio. Additionally, VR was tested in the classroom as a tool to afford idea expression and collaboration. In this regard, VR is emphasized as an interesting technology to encourage development within two of the 3 character dimensions – interpersonal and intellectual skills, by affording collaborative learning, engagement, and experiential learning. To explore VR's potential for developing the third character dimension, intrapersonal skill, the author worked with six-degrees-of-freedom (6-DOF) VR to encourage the development of grit. The author found

that by designing how a user moves in real space to interact with virtual space, one is choreographing the user's body movement. These body movements also impacted the user's emotional state allowing the concerned person to feel either empowered or vulnerable. This learning highlighted the importance of considering the whole body in VR.

Based on this work and additional research of the literature, the author is proposing that in theory VR has the potential to afford character development on all three dimensions. Specifically, by employing virtual embodiment, VR enables users to detach from habitual ways of thinking and, through this, effect cognitive changes (Osimo et al, 2015). Virtual embodiment is a body ownership illusion that extends past the use of an avatar, presenting the concerned person with the illusion that a surrogate body has been incorporated into their own. In an educational environment, this affords students the ability to become a heroic-self. This heroic-self or alter-ego personifies the desired character competencies and allows students to embody these in an in VR. Todd Herman, author of *The Alter Ego Effect*, uses mental visualization techniques in place of virtual embodiment for athletes and business managers to become more resilient, creative, & optimistic (Herman, 2019). The author proposes applying this methodology, while using virtual embodiment to short-cut the mental visualization process of an alter-ego. Additionally, as our understanding of the dimensionality of character and its impact on distinct, consequential life outcomes expands, we not only have to give emphasis to these character skills in education but also the tools for developing them, such as VR.

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