

Virtual Reality (VR) Applications in Learning: “Living Autism”

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EXECUTIVE SUMMARY

This chapter illustrates the use of VR applications in professional development and introduces an application used to assist teachers, learning support assistants (LSAs), and teaching assistants (TAs) to better understand autistic children’s behaviors while in the classroom. One of the challenges faced in classrooms is how to understand the autistic children’s behaviors and empathize with them. The proposed VR application repurposes a different form of narrative of the world of a child on the autism spectrum in an immersive environment designed for educators. The VR application in this chapter uses recorded footage through 360-degree cameras and special effects powered by Unity. In a context where integration is a key to today’s learning and education, the researchers believe that the use of VR to assist the teachers in empathizing with their learners’ traits and conditions may be of great benefit to the learners’ school experiences.

INTRODUCTION

The simplest definition of empathy can be given as one's ability to tune in to someone else's thoughts or feelings. However, empathy becomes quite complex when humans try to understand physical or emotional pain which they cannot associate to or with through their own differing experiences (Baron-Cohen & Wheelwright, 2004). The way human beings empathise with others, is through our past observations, experiences, associated memories or reasoning. But when the situation is beyond anything which the researchers have ever encountered or observed mindfully, it becomes increasingly difficult to put ourselves in others' shoes. The two primary components of empathy that have been identified include the affective component and the cognitive one (Decety & Ickes, 2011). Although in an empathic individual both components work in synchrony, the researchers believe that the latter can be supported through the development of one's mental capacities to take the other's perspectives. The researchers note as well, that very frequently empathy manifests itself as a shared representation of what one observes.

Thus, when facing a person who is expressing some form of emotion, whether this is sadness or happiness people tend to share those feelings with that person. When a person is for example discussing an illness, one tends to try and remember an experience in which the researchers have felt sick – this is referred to as embodied cognition. By manifesting such behaviour, one can put himself or herself in a better position to empathise with that person. However, when that representation involves some disorder, disability or impairment it becomes increasingly difficult for us to transfer those perceptions to an embodied cognition.

When the disorder is in itself as multifaceted as the autism spectrum, then the complexity becomes even more pronounced. Individuals exhibit different traits and properties, but one common point of agreement between the various communities working with the autism spectrum disorder is that research in autism should adopt a person-centred approach, focusing on the individual needs and differences of people affected by autism rather than focus on its definitions (Kenny, et al., 2015). The reason for this, is that many individuals affected by autism most often manifest behavioural traits in different ways. Autism Europe defines autism as a “lifelong disability... People on the autism spectrum experience persistent difficulties with social communication and social interaction, and might display restricted and repetitive patterns of behaviours, activities or interests.” This is a rather broad definition of autism. In fact, many people affected describe it in terms of the ways in which it affects their life experiences. Through a series of classroom observations, it was noted that around 80% of all children diagnosed as being on the autism spectrum exhibit sensory hyperactivity that may lead them to feeling distraught at the various sounds, touch or even movement (Case-Smith, Weaver, & Fristad, 2015). Although there are a number of documented sensory intervention methods used with children with autism spectrum disorder (ASD), when these children are in class with their teachers and their classmates, the situation changes.

This brings back to the initial argument that empathising with people in these challenging contexts, becomes extremely difficult unless one goes through their life experiences. A teacher or a learning support assistant in a class environment may not always be aware of what may affect a child diagnosed with ASD, and some actions, often overlooked as trivial or taken for granted may indeed prove to be disturbing for the child.

Virtual Reality (VR) technology has the potential to exploit sensory stimulation which can evoke in people different emotions, such as fear, sadness, happiness (Cho et al., 2016). It can cause people to attempt to run, move and touch the virtual objects as though these were real. Most of these responses are

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