

## Chapter 11:

# Virtual Reality (VR) – Application Areas

### Overview

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[1] Photo by Hammer & Tusk on Unsplash

## Overview: Application Areas of VR

- Military
- Education
- Healthcare
- Entertainment
- Fashion
- Business
- Engineering
- Sport
- Media
- Telecommunications
- Construction
- Film
- etc.



Can you think of three examples, how VR can be used in real-life contexts?

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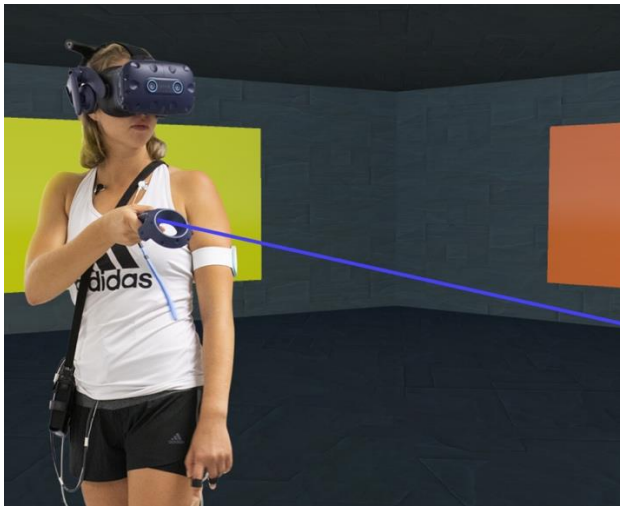
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## VR in Psychological Research and Treatment

VR is a simulation that is computer-generated and three-dimensional. One can interact with images and sounds of real-life situations and gets the experience of “being there”, which is termed presence. VR is used in psychological research [2] and therapy [3].

In research, VR allows for the testing of novel surroundings and set-ups that would be complicated and expensive to set up in real-life, such as the VR Stroop Room [2]. The VR Stroop Room is a psychological test that allows researchers to look at the physiological reaction of human participants to a task in which they have to use higher cognitive functions to inhibit interfering stimuli. Furthermore, VR allows the simulation of laboratory tests that usually require a lot of personnel to be conducted, e.g. the Trier Social Stress Test [4].



[2] Gradl et al., (2019)



[4] Photo by Amr Taha™ on Unsplash

In therapy, VR has been in use for quite some time, e.g. to allow patients to experience situations that can be graded in difficulty and repeatedly rehearsed in the presence of a therapist before the patients try out these new therapeutic strategies in real life [3].



Emmelkamp, P. M., & Meyerbröker, K. (2021). Virtual reality therapy in mental health. *Annual Review of Clinical Psychology*, 17, 495-519.

## Metaverse

VR & AR

Wikipedia defines the Metaverse as “a hypothetical iteration of the Internet as a single, universal and immersive virtual world that is facilitated by the use of virtual reality (VR) and augmented reality (AR) headsets.” The term “metaverse” originates from the sci-fi novel “Snow Crash”, which was published in 1992. The term is a combination of the words “meta” and “universe”. [6]

In most discussions about the metaverse, someone will mention the movie “Ready Player One”, which depicts a VR world, where people play, work, and shop – mostly to escape their depressing life – through the use of VR technology. The general pop culture idea of the metaverse includes holograms and “heads-up displays (basically anything Iron Man has used in his last 10 movies)” [7]

Concerns that have been raised about Metaverse-Developments are [6]:

- Feasibility
- Privacy
- User safety
- Social issues



[8] <https://www.spiegel.de/netzwelt/web/ready-player-one-von-steinberg-im-kino-rueckfall-in-die-achtziger-a-1198985.html#fotostrecke-b7eeee08-0001-0002-0000-000000159412>



Of course, one cannot talk about the Metaverse, without talking about what used to be Facebook and has since been re-termed “Meta”. To quote the company website:

“The metaverse will feel like a hybrid of today’s online social experiences, sometimes expanded into three dimensions or projected into the physical world. It will let you share immersive experiences with other people even when you can’t be together.” [9]

Since Facebooks announced its rebranding to “Meta” and shifted its focus on the “metaverse”, it has not yet become much clearer, what exactly the term means. [7]



<https://www.wired.com/story/what-is-the-metaverse/>

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## References

- [1] <https://unsplash.com/photos/3kB63Vz7xVg>
- [2] Gradl, S., Wirth, M., Mächtlinger, N., Poguntke, R., Wonner, A., Rohleder, N., & Eskofier, B. M. (2019, November). The Stroop Room: A Virtual Reality-Enhanced Stroop Test. In 25th ACM Symposium on Virtual Reality Software and Technology (pp. 1-12).
- [3] Emmelkamp, P. M., & Meyerbröker, K. (2021). Virtual reality therapy in mental health. *Annual Review of Clinical Psychology*, 17, 495-519.
- [4] Zimmer, P., Buttlar, B., Halbeisen, G., Walther, E., & Domes, G. (2019). Virtually stressed? A refined virtual reality adaptation of the Trier Social Stress Test (TSST) induces robust endocrine responses. *Psychoneuroendocrinology*, 101, 186-192.
- [5] <https://unsplash.com/photos/JpmhbbPhuZA>
- [6] <https://en.wikipedia.org/wiki/Metaverse>
- [7] <https://www.wired.com/story/what-is-the-metaverse/>
- [8] <https://www.spiegel.de/netzwelt/web/ready-player-one-von-stein-spielberg-im-kino-rueckfall-in-die-achtziger-a-1198985.html#foto-strecke-b7eeee08-0001-0002-0000-000000159412>
- [9] <https://about.fb.com/news/2021/10/facebook-company-is-now-meta/>