

# **A Systematic Review of the Literature of Virtual and Augmented Reality in Mindfulness**

Costa, D.<sup>1</sup>, Carneiro, A.<sup>1</sup>, Correia, T.<sup>1</sup>, Ferreira, P.<sup>2,3</sup>, Figueiredo, C.<sup>1</sup>, Lopes, L.<sup>1</sup>, Marques, A.<sup>4</sup>, Meirinhos, V.<sup>3</sup>, Rodrigues, A.C.<sup>3</sup>, Santos, M.<sup>1</sup>, Seixas, D.<sup>1</sup>, Silva, M.<sup>1</sup>, Torres, M.<sup>1</sup>, Valente, M.<sup>1</sup>

<sup>1</sup> ISCAP, Polytechnic of Porto

<sup>2</sup> University Portucalense

<sup>3</sup> CEOS.PP / ISCAP / P.Porto

<sup>4</sup> School of Health, Polytechnic of Porto

We live in an increasingly technological world, where new concepts have emerged, where new practices raised, where society has come to be designated not for what it is, but by the instruments at its disposal that allow it to further evolve (Kohn and Moraes, 2007). Virtual Reality and Augmented Reality allow users, through the available technology, to explore new aspects of certain spaces through the usage of senses such as vision, hearing or touch (Ribeiro and Zorzal, 2011). These senses, among others, are closely associated with the Buddhist tradition of meditation and the Mindfulness technique.

Mindfulness, according to Costa, et al. (2018), is a practice that brings diverse benefits to those who practice it, being useful in the fight against anxiety, pain and even as a mean to mitigate stress (on a personal or professional context), and may also improve the concentration of, and the general well-being of the individual.

This study, within the framework of the HR Powered by VR project, aims to identify the capabilities of Virtual Reality and Augmented Reality in Management and Human Resource Development, more specifically in Mindfulness, thus understanding the relationship between the two. At this point we present the first phase of the project which concerns the Systematic Review of Literature (SRL).

To follow the scientific rigor the SRL was applied searching the terms "realidade virtual" and "mindfulness", "virtual reality" and "mindfulness", "augmented reality" and "mindfulness" and "realidade aumentada" and "mindfulness" in the Scientific Repository of Open Access in Portugal (RCAAP), in the General Directorate of Education Statistics and Science (DGEEC), in the SCOPUS database and ISI Web of Science. From the

research carried out on the enumerated sources, a total of 102 results were attained. Of these, 59 results correspond to research carried out in SCOPUS and 43 to research conducted in the Web of Science, and no results were obtained in the remaining sources.

In order to guide the research and selection of scientific literature, different exclusion criteria were defined, such as language, study object, abstract and access to the full text of the article. From the total sample, after applying the criteria previously mentioned, a peer validation and resorting to a jury of specialists, a total of 38 articles were included (24 correspond to articles of the SCOPUS source and 14 to the ISI Web of Science source). It should be noted that from the articles included, all the results obtained in ISI Web of Science are a repetition of the SCOPUS source.

For a better mapping of the information in this study, several categories were created. In regards to the methodology, a mixed vision is evident in the results found, while in the "document type" category, the Conference Paper type is highlighted. It should also be pointed out that, in the scope of this study, 70% of the results come from health-related areas. In a global analysis of the objects of study, we can see that the focus of the study is focussed on the use of VR as a learning tool for the practice of mindfulness, thus analysing the impact that the use of this technique has on several human-life realities, with more than 60% of articles analysed mentioning that the results of their own research were positive.

Finally, and in comparison, with previous years, through the number of publications on these themes, it is evident an increase of notoriety of these themes, and this can be justified by technological advances, in particular the virtual reality technology and augmented reality technology, as well as a greater concern on behalf of companies for the well-being of their employees.

## **Keywords**

Human Resource Management; Virtual Reality; Augmented Reality; Systematic Literature Review; Mindfulness; Stress Management

## **References**

Kohn, K., & Moraes C. (2007). O impacto das novas tecnologias na sociedade: conceitos e características da Sociedade da Informação e da Sociedade Digital. In XXX Congresso Brasileiro de Ciências da Comunicação

Ribeiro, M., & Zorzal, E. (2011). *Realidade Virtual e Aumentada: Aplicações e Tendências*. Disponível em: [http://www.de.ufpb.br/~labteve/publi/2011\\_svrps.pdf](http://www.de.ufpb.br/~labteve/publi/2011_svrps.pdf)