

# Emotional response to the use of AR-Sandbox to perform motor exercises

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## Abstract

Currently, immersive environments are highly used powerful tools, which have had a positive impact in fields such as education, medicine, therapy and marketing, among others. Different authors present studies where use of immersive platforms of constant interaction are made from the capture of gestural movements of the participants, exposing themselves as a support to traditional processes. Additionally, different studies have shown that emotional or perspective responses are a stimulating factor for attention and influence the process carried out. However, in most of these scenarios, the way to capture this emotional response is through surveys, observation and interviews, which does not ensure totally honest answers on an emotional level. We proposed a case study where a group of students interacted with an augmented reality environment, in this case an AR-Sandbox in order to develop fine-motor exercises, in the same way, the same group interacted with a traditional environment to carry perform these exercises. Additionally, we use a brain-computer interface device, in order to obtain certain emotional metrics during the interaction of the students.

When performing the analysis of the results obtained, it was observed that 30% of the participants showed an increase in interest as time passed, when using the AR-Sandbox. In addition, concentration was presented as a growing factor in more than 40% of the participants with the AR-Sandbox than with the traditional method implemented.

## Biography

Andres Restrepo is a systems engineer by profession and current student of the master's degree in information and communications sciences at the Universidad Distrital Francisco José de Caldas, in Bogota, Colombia. He is currently a machine

learning engineer in a company called Vozy and is a professor at the International Fundación Universitaria Internacional de la Rioja - UNIR, in areas of artificial intelligence. He has been involved in research involving topics such as artificial intelligence, immersive environments, computer vision, and learning analytics. He has been a speaker at international events such as AIAI 15th in Crete Greece.