

# Perceptions of secondary school students towards virtual reality in STEM subjects. Effect of the gender variable

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## AIM

This paper aims to examine the perceptions and attitudes of students in this educational cycle towards the use of VR in scientific and technological subjects, as well as to analyze possible gender biases in the valuation of this technology.



## IN SECONDARY EDUCATION

A quasi-experimental study was carried out ( $n = 510$ ) based on the application in the classroom and use by students of four VR STEM lessons developed ad hoc for this research in three Spanish secondary schools located in different population environments and with different levels of experience in the use of this technology.



## RESULTS

The results show that the most highly rated aspects of VR are those related to the structure and design of the lessons, as well as their potential to facilitate attention to the content. A notable effect of the gender variable is detected.



## VR IN STEM

This second objective is justified by the scarcity of research that combine the use of VR for STEM education with the gender variable.



## INSTRUMENT

The Instructional Material Motivational Survey (IMMS) test -validated in previous studies- was used for this purpose. The resulting data were analyzed using descriptive and inferential statistics based on a predictive factor analysis using ordinal logistic regression.



## THE WOMEN

Women significantly perceive greater difficulty in the usability of the lessons and report that the VR experience helps them less to maintain attention. They claim to have learned less than their male peers. They also feel less confident in their learning while using these immersive technologies.