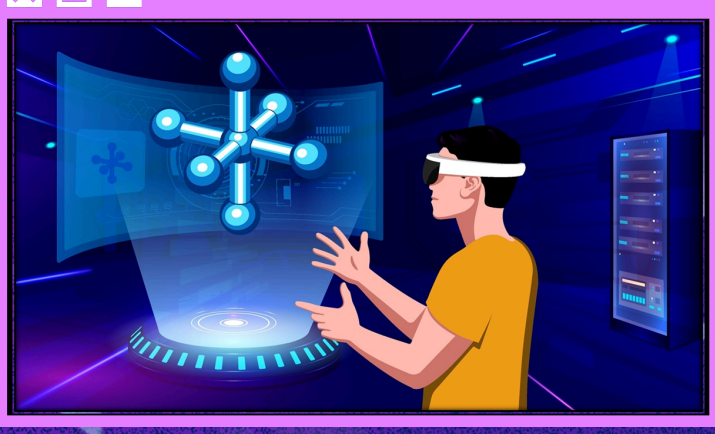
REVOLUTIONIZING EDUCATION

ABOUT

VR enhances education by enabling immersive visualization of complex concepts, such as 3D molecular structures and spectroscopy in analytical chemistry, providing a deeper understanding beyond traditional classroom methods.

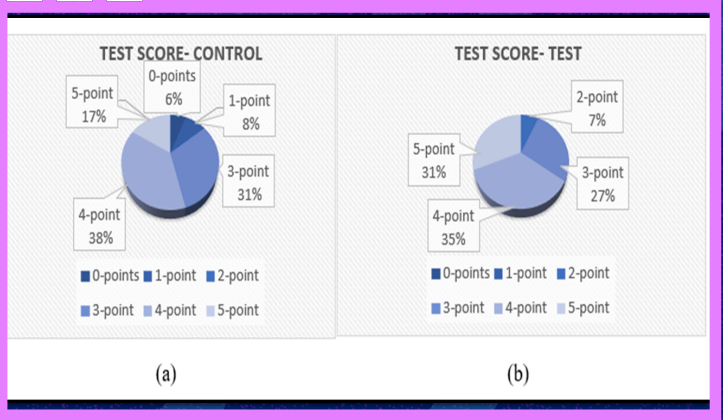


OBJECTIVES

VR enhances learning with interactive environments but lacks hands-on experience with sophisticated instruments, posing challenges for industry and research. ViLLEG bridges this gap by offering virtual labs that integrate practical skills with academic knowledge.

VALIDATION

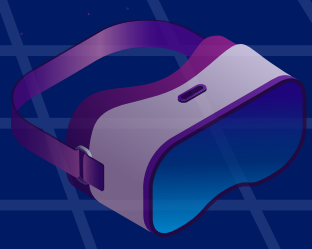
400 students participated—150 from bachelor's and 250 from master's programs—divided into two groups of 55. The control group learned IR and UV spectroscopy via traditional blackboard methods, while the test group used VR headsets for the same topics.



RESULT & ANALYSIS

PARAMETERS	CONTROL	TEST
SAMPLE SIZE	55	55
MEAN	3.42	3.89
STANDARD DEVIATION	1.20	0.94
STANDARD ERROR OF MEAN	0.16	0.13

The study found that VR-based learning for IR and UV spectroscopy led to significantly higher test scores compared to traditional methods.



ACHIEVING SUSTAINABLE DEVELOPMENT GOALS

Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

Implementing VR for IR and UV spectroscopy significantly improved students' practical skills. The COVID-19 pandemic highlighted VR's role in remote immersive learning, while VR labs also ensure safety by eliminating risks from hazardous chemicals.