

Section 1

Chapter 4 - Reviewing Solutions for Augmented and Virtual Reality

Case Scenario 2

Title: **AR-MAT 2.0 Project Virtual Interactive Geometry.**

Description:

The AR-MAT 2.0 Project Virtual Interactive Geometry is a project performed by Ibán de la Horra Villacé, and aims to "provide the mathematics of an educational resource in which students can improve understanding in such a complicated part as the assimilation of the three-dimensional geometry concepts. Another parallel objective is also achieved: the teacher provides a tool while making explanations. (De de la Horra, 2018, 174). The project does not aim to replace the textbook with new and different contributions to geometry. The project has a website: <http://citecmat.wixsite.com/armat>, where students and teachers will find in "Interactive Content" the geometry where theoretical and practical contents are presented through interactive tabs, a number of AR objects where markers are presented that show a variety of 3D objects with which you can interact in real time, and a collection of "video lessons" that allow students to receive first-hand the essential explanations of both theoretical and practical content in the current study of geometry; video lessons are presented in AR with which they can be watched anytime, anywhere.

Note that the project is developed for ESO freshman, and for implementing the project in the center, a variety of laptops, PCs or Tablets were available. "The launch of the pilot test for ESO freshmen lasted two weeks. The first phase was to explain the unit in the traditional way. During the second phase, explanations of the concepts were the same, but this time using the whiteboard and AR-MAT book. The ESO freshmen had a whiteboard, facilitating the implementation of the project without the need to go to other classrooms in search of the necessary tools ... The first working session in the second phase was oriented to knowledge and use of the Sketchup tool. The



remaining sessions were geared to the explanations made during the first phase. Such explanations as well as theoretical knowledge and exercises were conducted with the use of the whiteboard." (De la Honra, 2018, 176-177).

Note that the experience was evaluated by students, who indicated improved performance and showed a real interest in the development of the experience, which increased motivation.

