

THE VIRTUAL LABORATORY IN THE TEACHING-LEARNING PROCESSES IN THE SCHOOL

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Abstract

With the pandemic caused by COVID-19 since March 2020, the teaching-learning process around the world has moved from traditional teaching to online teaching in order to ensure the safety of students, teachers and other professionals involved in the education system. The widespread use of technological tools has concerned the treatment of both theoretical and practical content. For the purely theoretical topics we have seen, by many teachers, a substantial revival of the theoretical lesson in the traditional classroom in the new virtual context. Practical laboratory activities have required a greater by teachers to try to promote effective learning outcomes.

As we know, the practical component in the different disciplines and in particular the scientific ones is an essential element that allows students to understand and master the theoretical concepts treated. The pandemic has forced teachers to rethink their way of teaching, starting above all from the difficulties that have emerged precisely for practical activities.

The laboratory activities, thanks to digital technology, can be carried out using different solutions that see the integration of videos, simulations, quizzes, interactive animations and collaborative activities. The experiences made by many teachers lead us to believe that this teaching method can work as a substitute for traditional laboratory sessions.

In this work we intend to deepen the issue of new teaching through the proposal of significant experiences carried out in different secondary schools, in order to identify the teaching methodologies that have been most effective, with the aim of preparing usable proposals, also in the post-pandemic perspective, through the use of both solutions with VR (Virtual Reality) and with AR (Augmented Reality) as well as the different implications regarding didactic evaluation.

Keywords: Laboratory Teaching, Augmented Reality, Virtual Reality, Didactic Evaluation, Didactic Innovation.