

## How to involve Serious Games in traditional learning processes

Authors:	<ol style="list-style-type: none"><li>1. Mr. Jon Arambarri – R&amp;D Manager at <a href="http://www.virtualware.es">www.virtualware.es</a></li><li>2. Mr. David Moreno Canta – Education Manager at <a href="http://www.virtualware.es">www.virtualware.es</a></li></ol>
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### Abstract:

Serious Games have emerged as a new tool to assist traditional learning program. In these environments, the student is immersed, experience multimodal sensations and interacts with virtual objects including other humans, Compared with standard training representation of full chemical procedures.

Serious Games bring value added components & material accuracy and diversity and facilitate practice on rare cases (even, they allow performing high danger tests with no risk for students). Serious Games bring also an opportunity to change more radically the paradigm of technical skills training as they bring with them automation, precise monitoring, full recording of real-time quantitative data and immediate feedback, new features that were hardly available before. VR technologies offer the opportunity to reconsider didactic learning processes with new eyes.

### IN-VITRO – Virtual Laboratory Demo

In-vitro virtual laboratory, is oriented to enhance the learning process of the scientific method in the laboratory. In-Vitro takes learners through the complexity of a chemical process, activating and feeding curiosity and reasoning, and support the creative applications of the theory.

In-vitro virtual laboratory enables online interactive experimentations by accessing and controlling real instruments, or using simulated solutions.

In-vitro mediates the complexities of creation and usability of experiments, for specific pedagogical contexts in primary and secondary schools and higher education, including at university level

During the virtual class, students understand that they are surrounded by chemicals materials, even matters hidden in a pond or thorough the use of magnifying glasses the composition of minerals. Microscopes, magnifying glasses, matters and son on, allow users to perform virtual chemical experiments. At the same time that learners work on these tests, they get conscious of the effects of these activities in time, waste, energy, water, biodiversity and get environmental and sustainable development management skills.

In-Vitro enhances, through the game, an actively learn and comprehension of how to work in a laboratory, where the materials can be found, the different compounds studied and experiments to be performed (with no risk for student).

In Vitro follows a collaborative learning methodology allowing users to learn both in groups or individually, both at home or at school on their own pace.

