



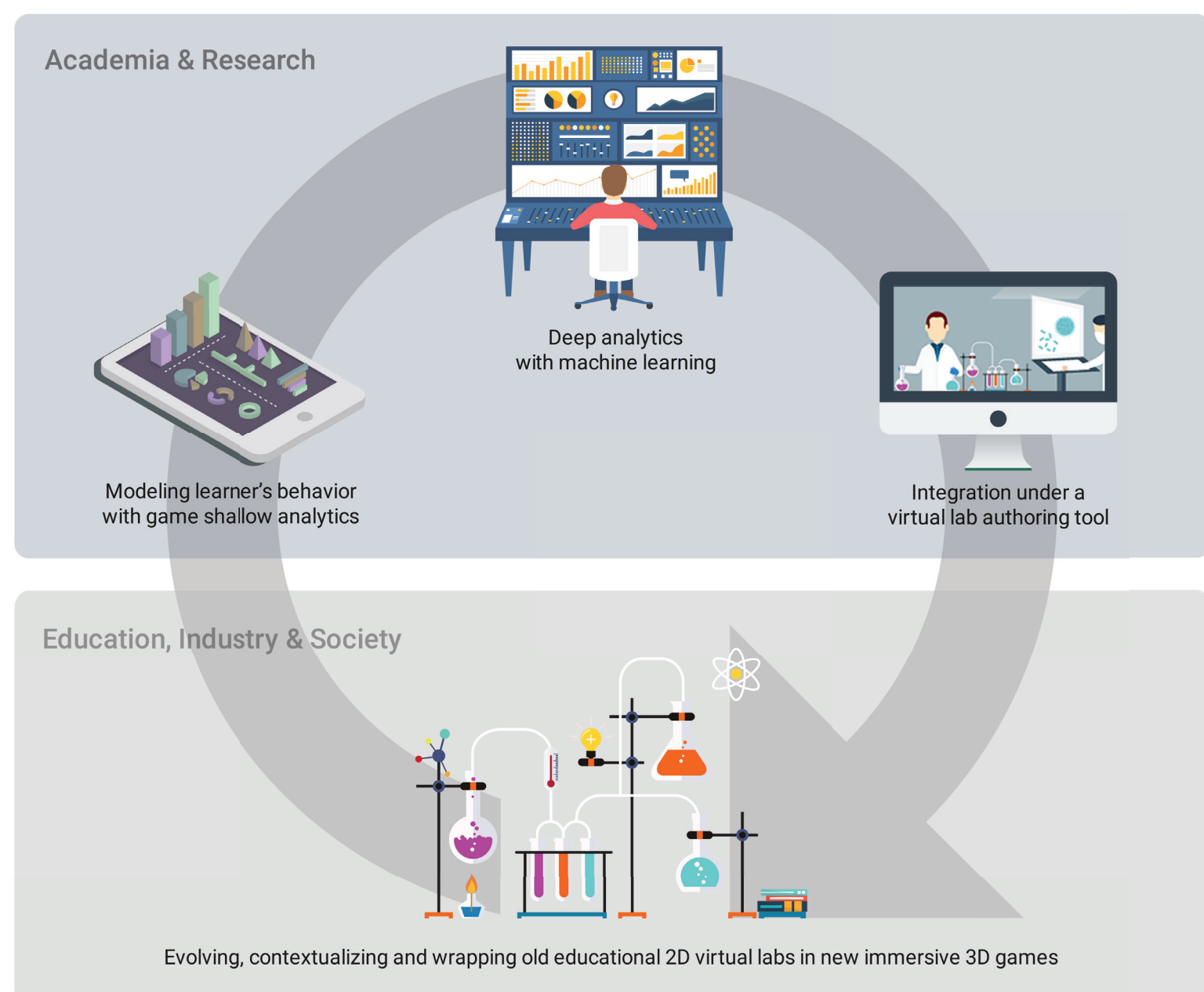
ENVISAGE

Enhance virtual learning spaces using applied gaming in Education

The goal of ENVISAGE is to enhance the design of virtual labs leading to optimal personalized learning processes. The project aims to develop an authoring environment, which equipped with data analytics methods and visualization tools that have been developed and reached maturity in the gaming industry, is suitable for iteratively evolving the design of virtual labs, and for dynamically adapting the learning content of the users.

CONCEPT

Offer a solution towards optimizing the learning process in virtual labs, therefore maximizing their impact in education. Migrate knowledge from the domain of digital games, where the capture and analysis of behavioral data has reached mature levels lately to Game Analytics. Develop a high-level, easy to use authoring environment that wraps the above methodological paradigms allowing for designing and implementing high-standard virtual labs.



OBJECTIVES

- Identify the kind of labs that need to be designed and implemented and the learning parameters and services that should be personalized through the analysis of the retained data logs.
- Monitor the activities of users and model their learning behavior by deploying shallow game analytics methods.
- Enable the prediction of the future behavior of learners by deploying deep game analytics methods.
- Provide a high-level authoring environment for designing and implementing virtual labs.
- Relying on an iterative A/B testing approach, inform teachers through a reporting system on the decision-making process for improving the design of virtual labs.
- Equip virtual labs with tools that perform Dynamic Difficulty Adjustment (DDA) and semi-automatic adaptation of the learning parameters according to personal requirements of the learners.
- Evaluate the ENVISAGE outcome.

AUTHORING

Instead of designing a specific virtual lab, ENVISAGE will integrate the aforementioned analytics tools in an authoring environment, which will allow for iterating the process of designing a virtual lab enabling the optimization of the several parameters of the lab. This iterative process, will enable the “perpetual enhancement” of virtual labs.

One of the success measures for an authoring environment is the immersion level that endows to the developed labs. However, most of the already existing authoring environments are capable of building labs which support merely 2D iconic representations of the actual experiments, where user can surely learn about the science behind the experiment, but not really attracted to perform more experiments so as to learn more.

As a consequence, the experience factor is too low due to the poor visualizations and the non-intuitive interfaces. ENVISAGE will exploit new and emerging technologies that allow for further immersion and intuition experiences that will upgrade the experience factor allowing students to learn faster and better. Moreover, it will explore how contemporary hardware technologies can be incorporated into the end product so as to boost the immersion factor of the end users.

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The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731900