



HECOF initiative is to create systemic change by fostering innovation in **Higher Education (HE)** teaching practice and national reforms in education by developing and testing an innovative **personalized, adaptive** way of teaching that exploits the digital data from students' learning activity in immersive environments and use computational analysis techniques from **data science and AI**.

OBJECTIVES

- Designing and developing **immersive learning environments** and **personalized adaptive learning systems** that focus on the academic discipline of chemical engineering.
- Engaging **teaching staff** and **students** in shaping and co-designing the learning system.
- Promoting the development and adoption of **ethical** and **lawful AI technologies** that respect fundamental rights in educational settings.
- Conducting **pilot studies** to assess the performance of the HECOF prototype system in real classroom settings, focusing on learning experience (completeness), benefits compared to traditional pedagogical models (quality), and user experience (acceptance).
- Creating **awareness** and **understanding** of the benefits and challenges of integrating Virtual Reality (VR) with AI for immersive and adaptive learning in higher education.
- Driving the **policy agenda** by formulating recommendations on the role and use of AI for personalized, adaptive learning in higher education and disseminating HECOF's work at EU and national political levels.

EXPECTED OUTCOMES

- Increased **motivation** and **engagement** among students through personalized education.
- Development of students' essential skills such as **critical thinking, communication, and problem-solving**.
- Advancement in **emerging technologies** like **AI and VR**, improving students' competencies in these areas.
- Stimulated **interest** in the academic discipline of **chemical engineering**, fostering a passion for continued learning.
- Enhanced teaching practices, including improved **digital competence** and efficient **student progress tracking**.
- Informing policy makers about HECOF's innovative approach for potential **integration** into higher education and vocational training sectors.
- Promoting the **ethical use of AI technology** in education, sharing evidence-informed best practices.

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