

PsytrAI: An AI-Driven Avatar Platform for Clinical Training in Psychology

DOI: <https://doi.org/10.62658/FAZER/HEI-LAB/1/2026>

Project Reference: FAZER+/ILIND/HEI-Lab/1/2026

Andreia Geraldo
Principal Investigator

29/09/2026 – 29/09/2028
Project Date



Team members and host UI&D:

Andreia Geraldo¹, Rita Pasion¹, Alexandre Rodrigues¹, Ana Filipa Oliveira², Carla Antunes¹, Catarina Botelho¹, Diogo Carreiras¹, Cátia Oliveira¹, Gabrielle Ultramar¹, Inês Tavares¹, Pedro Gamito¹, Marta Sousa¹, Nuno Fachada³, Pedro Fernandes¹

1. HEI-Lab - Digital Laboratories for Environments and Human Interactions
2. RISE-Health
3. COPELABS - People-Centered Computing and Cognition Research Center

Abstract:

Despite increasingly structured competency frameworks in psychology formal training (e.g., APA, EFPA), higher education institutions still struggle to provide students with sufficient contact with real patients before entering clinical practice. Core competencies such as clinical communication, history-taking, diagnostic reasoning, therapeutic alliance, and structured interviewing remain the hardest to develop through current instructional techniques and within the logistical limitations of academic settings, often perceived by students as

unrealistic, anxiety-inducing, and limited in improving their self-efficacy. Virtual reality has improved ecological validity in clinical training but faces significant barriers at its applicability (e.g., cost, cybersickness, and limited scenarios). Large language models (LLMs) can overcome these limitations by enabling dynamic, adaptive interactions between virtual patients and students, while allowing Professors to easily create and customize clinical profiles. Although LLM-based simulation shows promise in medical and nursing education, its application in psychology remains markedly underdeveloped. Up to date, no existing platform integrates avatar-based simulation across clinical, forensic, and neuropsychological sub-areas within a single, customizable, Professor-facing tool.

PsytrAI addresses this gap by co-developing and piloting an AI- and avatar-based platform to train clinical communication and case formulation skills among psychology Master's students at U.Lusófona. The project aims to (O1) conduct a participatory needs assessment, through literature review and stakeholder focus groups, mapping competencies requiring simulation-based training; (O2) co-develop (Professors, students, and practicing psychologists) an LLM-powered platform enabling dynamic dyadic interaction with virtual patients and a customizable interface for case scenario management; (O3) evaluate usability, ecological validity, and content validity through expert panel review and usability testing; (O4) pilot the platform within Master's curricular units, assessing impact on students' self-efficacy, engagement, motivation, and perceived professional development; and to (O5) disseminate methodology and findings through peer-reviewed publications and conferences, positioning PsytrAI as a replicable model for other institutions.

Grounded in participatory design, PsytrAI offers a scalable, equitable alternative to immersive VR, bridging the gap between classroom learning and real clinical practice in psychology education.