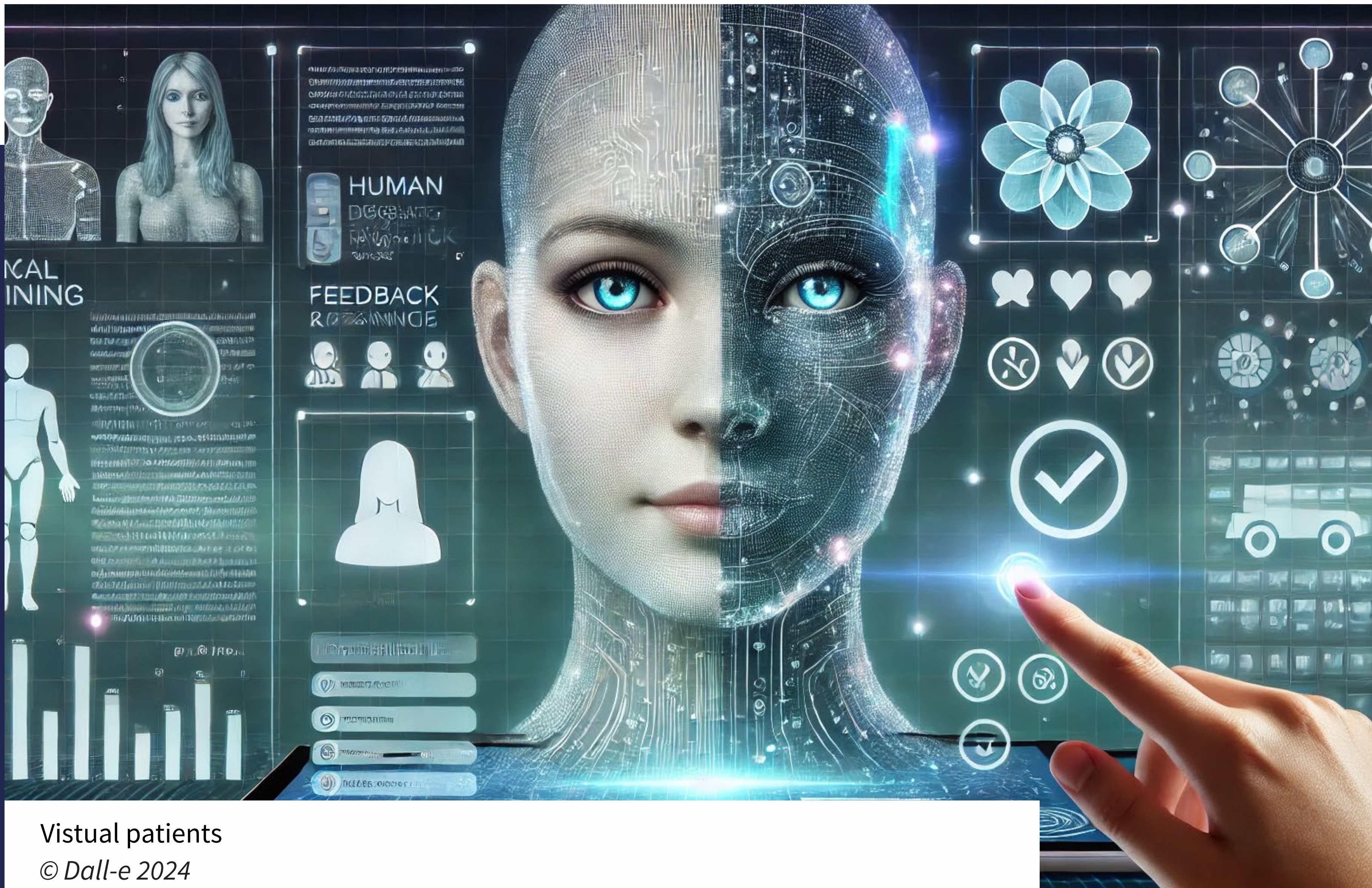


Virtual Patients: A training module in Shared Decision-Making

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Innovative because...

The development of VP based on qualitative patient interviews is a groundbreaking step in the use of LLM to teach communication techniques and SDM processes. At UZH, they are the first of its kind. The advanced AI and machine learning used creates interactive and immersive learning experiences that, corresponding to empirical reality, are diverse. Because students lack real-world patient contact, the VP exercises significantly improve the quality of medical education. The planned innovative feedback mechanisms, such as automated real-time feedback and peer review processes, enrich the learning experience. The VPs are multilingual, which increases their accessibility and usefulness in different educational settings.

Exemplary because...

This teaching project is based on a didactic model that can be easily adapted to other medical courses and training programs, as well as to various fields of health education (e.g. nursing, pharmacy). By documenting and sharing the project results and methods, other health education institutions can adopt and adapt the concept of VPs. To promote the introduction of VP in medical education internationally, the project results and methods are published in academic journals and presented at conferences. Experiences are shared with other faculties at UZH that also deal with the relationship between patients and health professionals, e.g. psychology (PhF) or spiritual care (ThF).

Virtual patients
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Idea

In the teaching project, two virtual patients (VPs) will be developed for medical students. These are two customized exercises for the Zurich Clinical Reasoning Tool (ZCRT), with which students in the bachelor's program are trained in **communication skills (module A)** and introduced to **Shared Decision-Making (SDM) (module B)** in the master's program. The training material for the LLM, on which the exercises with the VP are based, are **patient interviews from the Swiss DIPEX database** (Database of Individual Patients' Experiences). This allows students to practice in a realistic way using various scenarios in self-study.

Success factors / Results

Learning objectives: By making the teaching content (communication techniques, SDM) more interactive, it is easier for students to acquire the skills and develop their expertise. Learning communication skills in particular relies on such interactive contacts with following feedback. This promotes both clinical confidence and holistic clinical thinking. Students can learn at their speed and according to their own schedule. The collaboration with Micha Gundelfinger and Balthasar Eugster ensures that the teaching content is in line with the curriculum and the best didactic practices.

Use of digital technologies: The VP are integrated into the Virtual Training Platform for Medicine (VAM), with which the students are familiar. Instructions and guidelines for the interaction make navigation intuitive and easy to use. Students need a device with internet access. The VP are interactive and accessible via a standard web browser without additional software installation, which reduces technical barriers. Collaboration with technical experts in AI and educational technology ensures the technical robustness of the VP.

Students' involvement: To ensure that the VPs meet didactic requirements and are effective, students' input is specifically included in the initial (validation of the teaching concept) and final (beta testing of the VPs) phases.

Maintaining and updating the VP modules: After finalizing the project, the IBME, in collaboration with Micha Gundelfinger and Balthasar Eugster, ensures the continuous maintenance and updating of the VP modules. Regular updates of the AI models and the VAM integration are planned to fix problems and take student feedback into account. If the evaluations are positive, the IBME plans to develop further VP modules and offer them via the same infrastructure.

Goals

Patient-centered medicine: The DIPEX patient interviews with which the VP are trained link patient-centered healthcare with the communication models and SDM concept addressed in the teaching courses. With the VPs students practice communication skills, which is a central component of treatment quality. The VPs offer realistic training opportunities to make meaningful decisions in diagnostics and therapy, taking into account the needs, preferences and concerns of the patients.

Blended Learning: With the VPs, students can apply the learning in the courses asynchronously. The exercises are free of barriers, done in self-study, and can be scheduled flexibly and repeated as often as desired. The learning process is ensured by multiple feedback mechanisms.

Protected learning environment: Students practice in a no-risk environment, which helps to overcome hurdles, since real-life interaction with patients can be ethically challenging for both sides.

Scalability: Even with the increasing numbers of medical students, the teaching staff is supported because the exercises run autonomously and the student performance is evaluated automatically. Patient contact can be practiced, which is often lacking due to a lack of volunteers. This ensures the quality of education.

Digitalization in teaching: VPs are using the latest technological advances to ensure realistic and diverse patient interactions. Support from the UZH Teaching Development team helps to build experience in using AI in teaching.



A project supported by the
funding line open_innovation

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