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Learning to save lives in the VR shock room Medical students train in virtual reality

Medical students at Ulm University can train in a virtual shock room and practise treatment procedures regardless of time and place. Together with the Ulm-based company TriCAT, those responsible at the Medical Faculty have created a state-of-the-art, virtual learning environment that is based on the real-life training shock room in the TTU training hospital training hospital. The benefit: through repeated training, students deepen their skills and become more confident in dealing with emergency situations.

"Team timeout!" shouts medical student Jonas Mattig to his fellow students. The three of them listen intently to their team leader for the next ten seconds. He summarises the treatments carried out on the virtual patient, asks for vital parameters and announces the next steps. What the students see behind their large VR glasses is a purely virtual 3D copy of a shock room, as found in many emergency departments. The Medicine equipment is reproduced in great detail, a patient is lying on the examination table and the other team members can be seen as digital avatars. The simulation also runs on two large screens on the walls; tutors give the participants tips and advice.

"I'm glad that we can practise emergency situations like this and realistically familiarise ourselves with the stress," says medical student Carmen Maier, who took on the role of an anaesthetist in the simulation when treating a motorcyclist who had an accident. Her fellow student Jutta Karmann adds: "We can apply the knowledge we've learnt in practice, which is great."
Since the summer semester, two 90-minute VR sessions in the virtual shock room have been part of Medicine training at Ulm University. "With this innovative learning setting, we are taking realistic training in Medicine to a new level," says Dr Claudia Grab-Kroll, Head of Studies and Teaching at the Medical Faculty. "We are supplementing and expanding the range of courses offered by our TTU," says Deans of Studies Professor Tobias Böckers, "Our vision is teaching that combines traditional and digital elements - for the competent, reflective and empathetic doctors of tomorrow."

It took three years from the initial idea to the finished virtual shock room. The development was initiated by the Competence Centre eEducation in Medicine at the Medical Faculty and implemented by the Ulm-based software company TriCAT, which specialises in virtual learning and working environments. "With this project, Ulm University is setting new standards in digital teaching and medical didactics," emphasises Markus Herkersdorf, CEO of TriCAT. Such a comprehensively virtualised shock room is unique in this form. University and Medical Faculty are taking the next step in the field of digitalisation and AI with this type of training, University President Professor Michael Weber and Dean of Medicine Professor Thomas Wirth agree.

Students will be able to practise treatment procedures, teamwork and decisions on diagnosis, treatment or care in the virtual environment. "Mistakes are expressly permitted and even encouraged," explains tutor Felix Groß, himself a 10th semester medical student, who has been involved in the project over the past year and a half and is now also writing his doctoral thesis on the subject. "The students receive qualified one-to-one feedback from us and can therefore continue to work on their skills."
Another benefit of the simulation: significantly more students can practise different scenarios - and thus become more confident and competent. "I would like to practise more often and earlier in my studies using virtual practice scenarios like this. That way, I can better prepare for emergencies that rarely occur in reality and can therefore hardly be practised. It gives me confidence," says medical student Jutta Karmann after the virtual patient has received initial treatment.

To date, around 70,000 euros have been made available for the development of the virtual shock room learning environment from the "Sonderlinie Medizin" programme of the state of Baden-Württemberg.

Press release

23-Jul-2025
Source: Ulm University

Further information

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