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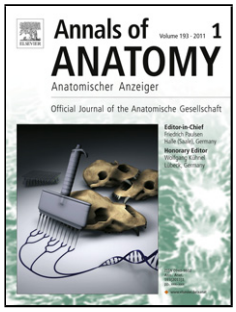

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An Augmented Reality Magic Mirror as Additive Teaching Device for Gross Anatomy

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Abstract

When preparing young medical students for clinical activity, it is indispensable to acquaint them with anatomical section images which enable them to use the clinical application of imaging methods. A new Augmented Reality Magic Mirror (AR MM) system, which provides the advantage of a novel, interactive learning tool in addition to a regular dissection course, was therefore tested and evaluated by 880 first-year medical students as part of the macroscopic anatomy course in 2015/16 at Ludwig-Maximilians-Universität (LMU) in Munich. The system consists of an RGB-D sensor as a real-time tracking device, which enables the system to link a deposited section image to the projection of the user's body, as well as a large display mimicking a real-world physical mirror. Using gesture input, the users have the ability to interactively explore radiological images in different anatomical intersection planes. We designed a tutorial during which students worked with the system in groups of about 12 and evaluated the results. Subsequently, each participant was asked to assess the system's value by filling out a Likert-scale questionnaire. The respondents approved all statements which stressed the potential of the system to serve as an additional learning resource for anatomical education. In this case, emphasis was put on active learning, 3-dimensional understanding, and a better comprehension of the course of structures. We are convinced

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