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Supporting learning with augmented reality

Krüger_3D-Modelle_veröffentlicht unter CC BY 4.0 Lizenz, Teepflanze erstellt von ffish.asia_floraZia.com, Walnuss von

Description

Dr Jule Krüger is a research assistant at the Chair of Digital Education at the University of Potsdam and focuses on the fields of application of augmented reality (AR) in education. By linking virtual and physical elements, AR offers a wide range of new possibilities for supporting learning scenarios. Research shows the positive effects on learning that are expected from educational practice. When used in botanical gardens as extracurricular learning locations, for example, the benefits of virtual information can be combined with the advantages of the existing plants. Analogous to visualisations in botanical gardens, a wide range of offers are conceivable. Interaction with virtual 3D models, which are linked to the physical world via AR markers and visualised in a relevant context using tablets, is just one possible implementation.

Details

- Technology-supported and multimedia learning
- Learning processes and results in augmented reality (AR)
- AR-specific learning mechanisms

Developmental status

- Equipment: Class set of Samsung tablets, several iPads, VR glasses, ring for measuring physiological reactions available via the department
- Software: Unity with Vuforia plugin for development, Blender for 3D models, initial tests with Meshroom and Kiri Engine Pro for photogrammetry

Scientific literature

- Krüger, J. M., & Ramm, S. (2024). Conceptualizing and Developing an AR-enriched Workshop for Teaching School Children in a Botanical Garden. *Practitioner Proceedings of the 10th International Conference of the Immersive Learning Research Network (iLRN2024)*, 60–65. https://doi.org/10.56198/5M1RH5SEQ
- Krüger, J. M. (2023). Augmented Reality for Learning—The Role of Contextuality, Interactivity, and Spatiality for AR-based Learning Experiences [Doctoral dissertation, University of Duisburg-Essen]. https://doi.org/10.17185/duepublico/78994

Applications

- Extracurricular learning centres
- Teaching - Learning materials
- Mobile learning

Keywords

- Augmented Reality
- Visualisation
- Situated learning
- 3D materials
- Interaction

Interest in cooperation

- Research co-operation
- Application development
- Material design
- Technical co-operation

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