

Medienbildung: Gestaltungsbasierte Lehr-Lernkonzepte mit robotischen Objekten RoboSTEAM - Interaktive Textilien mit Arduino LilyPad

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Abstract

The presentation was given at Carl Benz school Karlsruhe to the teachers. It deals with developing Smart textiles with LilyPad Arduino technology [1-4], the didactic approach addressing Smart Textiles in Teaching-Learning processes, the context of the Erasmus+ Project RoboSTEAM [5-8] and the organization with KIT students as mentors to run the school project.

Keywords

RoboSTEAM at school, Smart textile didactics, Arduino LilyPad, STEAM education

Link to the presentation

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References

- [1] F. J. García-Peñalvo, D. Reimann and C. Maday, "Introducing Coding and Computational Thinking in the Schools: The TACCLE 3 – Coding Project Experience," in *Computational Thinking in the STEM Disciplines. Foundations and Research Highlights*, M. S. Khine, Ed. pp. 213-226, Cham, Switzerland: Springer, 2018. doi: 10.1007/978-3-319-93566-9_11.
- [2] F. J. García-Peñalvo, D. Reimann, M. Tuul, A. Rees and I. Jormanainen, "An overview of the most relevant literature on coding and computational thinking with emphasis on the relevant issues for teachers," TACCLE3 Consortium, Belgium, 2016. doi: 10.5281/zenodo.165123.
- [3] D. Reimann and C. Maday, "Smart Textile objects and conductible ink as a context for arts based teaching and learning of computational thinking at primary school," in *Proceedings of the Fourth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'16) (Salamanca, Spain, November 2-4, 2016)*, F. J. García-Peñalvo, Ed. ICPS: ACM International Conference Proceeding Series, pp. 31-35, New York, NY, USA: ACM, 2016. doi: 10.1145/3012430.3012493.
- [4] D. Reimann and C. Maday, "Enseñanza y aprendizaje del modelado computacional en procesos creativos y contextos estéticos," *Education in the*

- Knowledge Society*, vol. 18, no. 3, pp. 87-97, 2017. doi: 10.14201/eks20171838797.
- [5] F. J. García-Peñalvo, "O3 RoboSTEAM Environment – First overview and discussions," presented in RoboSTEAM Erasmus+ project Kick-Off, Bragança, Portugal, February 15-16, 2019, 2019. Available from: <https://goo.gl/hro7tc>. doi: 10.5281/zenodo.2571497.
- [6] RoboSTEAM Consortium, "RoboSTEAM Project," presented in RoboSTEAM Erasmus+ project Kick-Off, Bragança, Portugal, February 15-16, 2019, 2019. Available from: <https://goo.gl/Ni43mK>. doi: 10.5281/zenodo.2575066.
- [7] M. Á. Conde *et al.*, "RoboSTEAM - A Challenge Based Learning Approach for integrating STEAM and develop Computational Thinking," in *Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality - TEEM*, León, Spain, 2019: ACM
- [8] J. Gonçalves *et al.*, "Educational Robotics Summer Camp at IPB: A Challenge based learning case study," in *Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality - TEEM*, León, Spain, 2019: ACM