

Technical Advances and Didactic Reasoning in the Project AuthOMath (2022 – 2024)

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project AuTO a moodle based authoring tool for randomized interactive and dynamic multimodal mathematical tasks with automatic adaptive feedback





The authoring tool is an upcoming version of STACK that facilitates the implemen-



tation of GeoGebra applets into task and feedback (Lutz 2023)

The didactic concept will take up the necessary didactic reflections that are initiated by the specific affordances of GeoGebra (interactivity dynamization, multimodality) and STACK (adaptive feedback, randomization). It will provide guidelines with concise information for digital tasks design with a sound didactic basis.

From the student teachers' point of view, writing digital tasks with AuTo can therefore be seen as an application and deepening of the didactic knowledge they have acquired during their studies. interactivity

dynamization

• multimodality

adaptive feedback

randomization

focussing on **flexibility and activity** in mathematical thinking focussing on **variance** in mathematical thinking

- a priori analysis of valid range of values for randomizing realcontext problems (Ríos-San-Nicolás et al., 2022)
- a priori analysis of range of possible solving strategies for programming adaptive feedback (Ríos-San-Nicolás et al., 2022)
- a priori analysis of example spaces for programming adaptive task deployment (Kinnear, G. &
- make objects of learning manipulative and explorative with interactive applets in tasks
- activate learning from errors, e.g. with interactive applets in feedback (Pinkernell, 2021)

Foster, C., o.J.)

 a priori analysis of well-known misconceptions and systematic errors for programming adaptive feedback (Pinkernell, 2020)



a didactic concept for designing online based **DiCO** project interactive material for use in teacher education **DiCO** result 2

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