

# Design Science and Its Importance in the German Mathematics Educational Discussion (ICME-13 Topical Surveys)

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Main Topics You Can Find in This ICME-13 Topical Survey

- Roots and scope of design science;
- The role of substantial learning environments;
- Examples of current design research projects and developments;
- Collective teaching experiments;
- Commonalities and variations between design science and design research.

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This ICME-13 Topical Survey reviews the state-of-the-art by first exploring the roots and scope of design science. Second, it presents two examples of current design science projects that focus on substantial learning environments including a student and a teacher perspective. Subsequently, the book elaborates on how empirical research can be conceptualised within design science. Lastly, it explores developments in design science from a national and international perspective, while also discussing current trends in design research. Within the German-language tradition, considering mathematics education as a design science primarily draws on the works of Wittmann. The core of this approach constitutes designing and investigating learning environments that involve substantial mathematics.

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