

# Burning Empirical Issues in Computer Science Education

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Informatics education is still in an unenviable situation. Besides the innovative pressure of computer science with permanent paradigm changes and the lack of trained teachers there are very few approaches that focus on major problems or aim at proven didactical results and reliable recommendations for teaching computer science in schools. Rather than that didactical decisions are mostly based on certain systematic considerations as well as many singular examples for successful lessons. There is not even a reasonable collection of lessons where experiences were negative.

Internationally a number of empirical results is available which however can only partially be carried over to the German school system due to diverse visions on how to teach informatics in schools, namely the discussion on computer science education versus IT education. Remaining results often focus on the university level (BSc level).

In this contribution we address empirical issues that we consider basic in the context of computer science education and that are desperately awaiting an empirical solution, among them are

- the selection of a suitable programming language on different school levels,
- the relationship between iteration and recursion,
- the use of educational material in lessons, in particular of hard- and software,
- the analysis of students' misconceptions on computer science issues and measures to help overcome these barriers.

We summarize state of the art, discuss consequences on lessons and sketch possible test arrangements.