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Systems for Adaptive, Computerbased Learning

Cornelia E. Dowling

Technische Universität Braunschweig

Institut für Psychologie

cornelia@msced.psych.nat.tu-bs.de

Systems for adaptive computerbased learning in the field of School-Mathematics are now on the market or available for research purposes. Such systems consist of several components, as, for example,

- the adaptive assessment component,
- the component for selecting problems and exercises adaptively,
- the component for querying experts on the structure of the knowledge considered,
- the component for integrating judgments of different experts, and
- the component for validating knowledge structures.

This paper discusses the theoretical foundations for these components, their implementation, their state of development, and ideas for further improvements.