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Engagement with interactive diagrams: the role played by resources and constraints.

Leung, Allen (ed.) et al., Digital technologies in designing mathematics education tasks. Potential and pitfalls. Cham: Springer (ISBN 978-3-319-43421-6/hbk; 978-3-319-43423-0/ebook). Mathematics Education in the Digital Era 8, 153-173 (2017).

Summary: Interactive textbooks appear to be the tools of choice in mathematics instruction in the foreseeable future. It is important, therefore, to establish the theoretical foundations of design that define student-textbook-teacher interactions. In our long-term research, we suggested, tested, and refined a semiotic framework that offers a set of terms helpful in analyzing how the designed features of interactive diagrams (IDs) function in these interactions. The present chapter summarizes key design decisions about resources and constraints of interactive texts according to various semiotic functions, and discusses the role of designed resources and constraints of the IDs in student engagement with interactive texts.

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