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Designing assessment tasks in a dynamic geometry environment.

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, 77-98 (2017).

Summary: Despite the widespread use of Dynamic Geometry Environments (DGEs) in mathematics classrooms, they feature very little in most teachers' assessment practices. Indeed, many researchers have acknowledged the lack of research on how DGEs can and should be used in the context of assessment, and on how the learning that is developed through the use of DGEs in mathematics can be evaluated. Digital technologies include a range of mathematical and technological competencies that are not assessed in a paper-and-pencil environment. Moreover, the feedback provided by DGEs involves a whole new dynamic of action/interaction during assessment. This paper draws on previous work on task design in DGEs to provide a framework for identifying and designing different types of assessment tasks according to the specific goals of the teacher. These types of tasks will be exemplified using tasks designed by the first author for the iPad-based, multi-touch Sketchpad Explorer.

Classification: U70 D60

Keywords: dynamic geometry; digital technologies; formative assessment; feedback; circle geometry; task design

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