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The role of authentic tasks in promoting twenty-first century learning dispositions.

Cho, Young Hoan (ed.) et al., Authentic problem solving and learning in the 21st century. Perspectives from Singapore and beyond. Singapore: Springer (ISBN 978-981-287-520-4/hbk; 978-981-287-521-1/ebook). Education Innovation Series, 19-39 (2015).

Summary: Authentic tasks are widely acknowledged by educators to foster desirable twenty-first century (21C) learning dispositions in students, particularly in terms of motivated and engaged learning. In mathematics education specifically, authentic tasks are commonly upheld as essential to the development of positive student affect towards mathematics, as well as mathematical problem-solving competencies and its encompassing socio-cognitive processes – reasoning, communication and connections – among learners. Despite this widespread belief in the value of authentic tasks, there is surprisingly limited empirical evidence on the relationship between the use of authentic tasks in classrooms and productive learning dispositions, particularly from the perspective of students as a critical stakeholder group. This chapter attempts to address this knowledge gap. Drawing from a comprehensive study involving more than 4,000 students across 129 classrooms from 39 secondary schools in Singapore, this chapter foregrounds the extent to which the use of authentic tasks predict a suite of productive 21C learning dispositions. These comprise positive beliefs, attitudes and motivational dispositions that lend themselves towards deeper learning, namely, mastery-approach and performance-approach goal orientations, self-efficacy and task value and individual and collaborative learning engagement. Hierarchical linear modelling results underscore the significance of authentic tasks in predicting students' individual engagement levels and mastery-approach and performance-approach goal orientations, as well as the extent to which they consider mathematics to be interesting, useful and important. Authentic tasks, however, were not a significant predictor of students' collaborative engagement and self-efficacy in learning mathematics. The implications of these results are discussed, particularly in light of current understandings of Singapore secondary school students' self-reported dispositions towards learning mathematics and their strong global performance in international mathematics achievement tests.

Classification: D50 M10 D30

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