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Using productive disposition to differentiate between students' level of precision when critiquing a peer's work.

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Summary: This study examined the productive disposition of pre-algebra students who demonstrated similar knowledge of the focal content but varied in other academic behaviors expected in the Common Core State Standards for Mathematics (CCSSM). Specifically, the study considered students' attention to precision when critiquing a peer's work. The comprehensive definition of productive disposition used included task values (interest, utility), an ability belief (efficacy), three personal achievement goals, and negative emotions. As hypothesized, the 61 students who provided a more precise critique reported higher productive disposition (in particular, significantly higher mastery-approach personal achievement goals and less frequent negative emotions) than the 79 students who provided a basic critique. These findings illustrate how productive disposition can inform assessments of mathematical competence within the CCSSM recently implemented across the United States.

Classification: C23 C33 D63

Keywords: attitudes; beliefs; standards; student assessment; communication; numbers; fractions; productive disposition; differentiation; peer critique

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