Improving (student) teachers' differentiation practices by using the ADAPT instrument and manual: opportunities and obstacles

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The study presents research from the projects TEDS-Instruct and TEDS-Validate. Based on the established conceptual framework with Three Basic Dimensions (TBD), we have developed an observational instrument to measure instructional quality in secondary mathematics classrooms. Assuming equivalence of the measures across two German samples, we investigate into the validity of our assumptions in the sense of Kane (2013) by combining measurement invariance and generalizability analysis. To explore the psychometric properties of the observational instrument, we collected data from secondary mathematics classrooms (N = 76) in different parts of Germany and observed two lessons per classroom (90 minutes each). Four ratings per lesson were performed by extensively trained observers. Instructional quality was rated using an observational instrument with three generic dimensions, as well as two subject-specific dimensions (classroom management, student support, cognitive activation, subject-related quality, teaching-related quality). The results indicate similar levels of measurement invariance for all dimensions but cognitive activation. Additional analyses show that lack of measurement invariance could be due to measurement error, but more interestingly, cognitive activation items did not load on the same factor either. In the presentation, we show how a critical reception of the findings has led the developers to a simpler framework of instructional quality which can still be regarded as an enhancement of TBD. In general, however, the observational instrument translated well to a different educational context, and substantial amounts of variability in instructional quality were due to differences between classrooms, as expected. As an outlook to future research, we discuss how our findings could inform the development of other observational instruments involving both generic and subject-specific dimensions.