

Beyond Mathematical Thinking: Teachers' Noticing of Engagement and Dispositions in Primary Mathematics

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Research on teacher noticing in mathematics education has traditionally foregrounded teachers' attention to students' mathematical thinking, particularly their use of strategies, representations, and reasoning (Jacobs et al., 2010; Van Es & Sherin, 2002). While this focus has been foundational to understanding responsive teaching and formative assessment, teachers' classroom experiences suggest that noticing may extend beyond students' mathematical thinking alone. This short communication reports a finding from a qualitative study that explored primary teachers' reflections on noticing as an informal formative assessment practice across online and face-to-face mathematics teaching contexts.

The study involved semi-structured interviews with eight primary teachers, in Melbourne government schools, conducted on two occasions in 2020: once during Emergency Remote Teaching (ERT) and once after teachers and students returned to the physical classroom. Although the study was initially designed to investigate teachers' noticing of students' mathematical thinking, inductive analysis revealed that teachers frequently attended to aspects of learning beyond mathematical content. In particular, teachers described noticing students' engagement, dispositions, and approaches to learning as meaningful indicators that informed instructional decision-making.

Across both contexts, teachers used these relational and dispositional insights to interpret students' thinking, adapt tasks, provide feedback, and plan subsequent instruction. During ERT, reduced access to students' mathematical work and interactions heightened teachers' attention to individual learning behaviours and engagement patterns. However, such noticing was not limited to online teaching; upon returning to face-to-face classrooms, teachers continued to value and draw on insights about students' dispositions and engagement when responding to learning needs. These findings suggest that engagement and dispositions may function as important forms of evidence within teachers' informal formative assessment practices in mathematics classrooms.

This short communication contributes to research on teacher noticing by highlighting how teachers make sense of students as learners of mathematics, not solely through their demonstrated mathematical thinking but through their participation, affective responses, and learning behaviours. These findings extend current discussions in teacher noticing, formative assessment, and teacher education by highlighting the value of a more holistic conceptualisation of what counts as meaningful evidence of mathematics learning.

References

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- Van Es, E. A., & Sherin, M. (2002). Learning to notice: Scaffolding new teachers' interpretations of classroom interactions. *Journal of Technology and Teacher Education*, 10(4), 571–596.