
Title	Mathematics teacher noticing: Expanding the terrains of this hidden skill of teaching
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Source	<i>13th International Congress on Mathematical Education, 24 – 31 July 2016, Hamburg, Germany</i>
Published by	Springer Open

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Citation: Choy, B. H., Dindyal, J., Lee, M. Y., & Schack, E. O. (2016). Mathematics teacher noticing: Expanding the terrains of this hidden skill of teaching. In G. Kaiser (Ed.), *The Proceedings of the 13th International Congress on Mathematical Education* (pp. 641-642). Retrieved from https://link.springer.com/chapter/10.1007/978-3-319-62597-3_47

Mathematics Teacher Noticing: Expanding the Terrains of This Hidden Skill of Teaching

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Aims and Key Questions

Research on what and how mathematics teachers notice in the classrooms has gathered momentum, with an emphasis on developing noticing expertise in mathematics teachers. This Discussion Group aimed to explore and expand the terrains of research on teacher noticing in three aspects: conceptualizations of noticing, methodologies for studying noticing, and the study of noticing in different contexts. There are three key areas for discussion: (1) conceptualizations of noticing, (2) methodological challenges of noticing, and (3) contexts in which the study of noticing can be situated. During our discussion group, our three invited speakers, John Mason, Sergiy Klymchuk, and Julie Amador, shared their perspectives on the topic to provide an overview of our current understanding of the three set of questions. Their sharing generated many questions for us to think about. In this short report, we will highlight two pertinent questions that may be useful for guiding future research.

Is It Noticing or Is It ...?

Most researchers view noticing as a form of professional vision, consisting of three interrelated component skills, attending to, interpreting, and responding (Sherin, Jacobs, & Philipp, 2011), while others see it as a set of practices that work together to improve teachers' sensitivities to enacting a shift in attention to recognize possibilities (Mason, 2002). Each of these conceptualizations can inform us about

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various aspects of noticing. However, our discussion uncovered an even wider spectrum of these different conceptualizations, from formative assessment to meta-cognition. However, it is not always helpful to have different conceptualizations of noticing, and more work is needed to achieve better clarity in our conceptualization of noticing.

What Is Studied Regarding Teacher Noticing, and How Is It Studied?

Investigating noticing poses considerable methodological challenges. Current research uses either an in-the-moment approach through utilizing a wearable camera or a retrospective approach through analyzing reflections after the lessons are conducted (van Es, 2011). A few studies, such as Choy (2016), have also adopted a pre-spective look at noticing during task design. Our discussion focused on the grain size or detail of the analysis of teachers' noticing. Even though we could not come to any consensus at the end of the discussion, it was clear that unpacking the "black box" of noticing (Scheiner, 2016, p. 229) would be critical if for advancing the study of teacher noticing. It remains to be seen how future technological advances in capturing what teachers see and think may mitigate the methodological challenges we are facing in this field.

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