

NOTICING AND WONDERING WITH TECHNOLOGY

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This presentation will discuss the design-based research process to develop a software tool that teachers can use to enhance their noticing and wondering of student work. The presentation will situate that discussion of software development within the larger EnCoMPASS project goal of developing an online community of teachers engaged in the creative assessment of student work to support mathematical thinking.

The Math Forum is an online educational community dedicated to supporting students and teachers to engage in meaningful mathematics. One practice that has emerged as central to disrupting teachers and students traditional answer-focused approaches to mathematics is *Noticing and Wondering* (Fetter, 2008) as a protocol for thinking about mathematics and “reinforc[es] the expectation of problem solving as a process” (Hogan & Alejandre, 2010, p. 33). The process of *Noticing and Wondering* has always been mediated through technology; further enhancing the “slowing down” of the problem solving process, and in doing so, honors student-generated ideas.

Our current NSF-funded project, EnCoMPASS, is designed to develop an online teaching community focused on understanding and improving mathematical thinking through work with formative assessments centered on student thinking. A major component of this work is the iterative design of software that will scaffold productive mathematical noticings and wonderings in order to provide individualized feedback to students and to collaborate with other members of the EnCoMPASS community to discuss student work. In this way the project attempts to create meaningful conversations around student thinking that serves to support strengthened instructional decision-making and to contribute to the ongoing conversation about teachers noticings (e.g. Sherin, Russ & Colestock, 2011). This presentation reports on the development of the software, the associated community and presents examples of teacher engagement with *Noticing and Wondering* in technologically mediated forms.

References

- Fetter, A. (2008). Using the PoWs: Getting started: How to start problem solving in your classroom. Retrieved from: <http://mathforum.org/pow/teacher/PoWsGettingStarted.pdf>
- Hogan, M. & Alejandre, S. (2010). Problem solving—it has to begin with noticing and wondering. *CMC ComMuniCator, Journal of the California Mathematics Council*. 35(2): 31-33.
- Sherin, M. G., Russ, R.S., & Colestock, A.A. (2011). Accessing mathematics teachers in-the-moment noticing. In M.G. Sherin, V.R. Jacobs, & R.A. Phillip (Eds.), *Mathematics teacher noticing : seeing through teachers' eyes*. (pp. 79 – 94). New York: Routledge.
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