Department of Mathematical Sciences Colloquium

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Advancing students' mathematical sophistication via mathematical tasks

In this talk, I will discuss the need for mathematical tasks as a means for students to develop mathematical knowledge and mathematical ways of thinking. If students are mathematically unsophisticated, will well-organized, clearly-presented lectures be sufficient for helping them to develop mathematical maturity? In the presentation, I will differentiate (a) between institutionalized mathematics and school "mathematics", (b) between sophisticated learners and passive "learners", (c) between knowledge dissemination and knowledge building as two modes of instructions, and (d) between ways of understanding and ways of thinking as two complementary subsets of mathematics that students should develop. I will illustrate, using tasks that I have developed, how mathematical tasks can be designed to accomplish certain learning and teaching objectives, such as to help students experience the need for certain concepts or algorithms, to review certain concepts, and to assess students conceptual understanding and ways of thinking. Students lack of mathematical sophistication can be inferred from their responses to those tasks.

Note: This presentation is an extension of the article Intellectual-Need-Provoking Tasks. This article, which has been accepted for publication in the Mathematics Teaching in the Middle School Article, can be downloaded at http://works.bepress. com/kien_lim/6/.

Friday, April 4, 2008 at 3 pm in Bell Hall 143
The University of Texas at El Paso

Refreshments will be served in front of the colloquium room, 15 minutes before the start of the colloquium.

For further information, please contact Dr. Pavel Solin, Bell Hall 220. Phone: (915) 747-6770, email: `solin@utep.edu`.