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Guadalupe I Lozano* (guada@unm.edu). *Understanding, abstracting, and building upon students' mathematical reasoning: a new course for prospective elementary and middle school Teachers*. Preliminary report.

In this talk I discuss a new mathematics topics course for undergraduate prospective teachers (PTs). The course's goal is to engage PTs in the practice of analyzing, evaluating, and building upon creative student-generated solutions to routine and non-routine mathematics problems. The course was created so as to address the gap between teachers' mathematics content knowledge and the application of that mathematics content knowledge to promoting and supporting reform-based practices (Ball & Bass, 2000; Hill, Ball & Schilling, 2008). In this presentation, I discuss the specific design, theoretical, and practical underpinnings of this course. I also explain why the approach is novel and relevant for prospective teacher education at the college level. Preliminary analysis of PTs' feedback indicates that PTs felt the course not only expanded their own mathematics content-knowledge base but also provided them with specific tools to help potential students reflect upon meaning-based misconceptions. Pre and post-tests suggest that PTs may have improved their ability to reason about non-traditional solutions that fall within the topics discussed in the course, but not in a manner that sustains a clear transfer of this ability to other mathematics topics. (Received September 16, 2008)