

**ZMATH 2015d.00636**

**Hsu, Hui-Yu; Silver, Edward A.**

**Cognitive complexity of mathematics instructional tasks in a Taiwanese classroom: an examination of task sources.**

J. Res. Math. Educ. 45, No. 4, 460-496 (2014).

Summary: We examined geometric calculation with number tasks used within a unit of geometry instruction in a Taiwanese classroom, identifying the source of each task used in classroom instruction and analyzing the cognitive complexity of each task with respect to 2 distinct features: diagram complexity and problem-solving complexity. We found that instructional tasks were drawn from multiple sources, including textbooks, tests, supplemental materials, and the teacher. Our analysis of cognitive complexity indicated that the instructional tasks frequently involved both diagram complexity and problem-solving complexity. Moreover, the geometric calculation with number tasks from nontextbook sources tended to be more cognitively demanding than those found in the textbooks. Implications of task analysis on geometry domain and textbook analysis studies are discussed.

*Classification:* G43 U23 D53

*Keywords:* geometry; teaching methods; problem solving; task analysis; textbook evaluation; difficulty level; cognitive processes; visual aids; cognitive complexity; cognitive demand; diagrams; instructional tasks  
<http://www.nctm.org/publications/article.aspx?id=42529>