

**Meeting:** 1003, Atlanta, Georgia, MAA CP N1, MAA Session on Teaching Visualization Skills

1003-N1-474      **Cecelia Laurie\*** (claurie@bama.ua.edu), Department of Mathematics, Box 870350, University of Alabama, Tuscaloosa, AL 35487-0350, **Cristina Gomez** (cgomez@bama.ua.edu), Elementary Education Program, Box 870232, University of Alabama, Tuscaloosa, AL 35487-0232, and **Wei Shen Hsia** (whsia@gp.as.ua.edu), Department of Mathematics, Box 870350, University of Alabama, Tuscaloosa, AL 35487-0350. *Teaching Visualization Skills in a Geometry course for pre-service Elementary School Teachers*. Preliminary report.

This paper addresses the issues of enhancing the visualization skills of pre-service elementary school teachers to have a deeper understanding of and fuller mental image of two-dimensional shapes. We will describe a series of activities used to accomplish this. Our basic frame of reference is illustrated by the following quote: "Contrary to what many people believe, students frequently do not use definitions of concepts in their thinking. Instead, they use concept images: a combination of all the mental pictures and properties that they have associated with a concept." (Teacher Note, The Visual Side of Learning, Investigations, a NCTM-standards based elementary school curriculum, TERC.) Even though our students have had previous experience with geometry in high school, their concept images are very weak. The part of the course devoted to visualization of two-dimensional shapes is structured around three main themes: generating varied visual images both as examples and non-examples of certain shapes, classification of shapes according to properties, and articulating/describing observed relationships. As an example, we will describe how Geometer's Sketchpad, a dynamic software, is used as a tool to help students formulate fuller, richer concept images of special quadrilaterals. (Received September 15, 2004)