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David E Meel* (meel@bgsu.edu), Department of Mathematics and Statistics, Bowling Green State University, Bowling Green, OH 43403. *Using Concept Maps to look at linear algebra understandings.*

This talk will draw from a longitudinal study looking at the implementation of concept mapping activities in elementary linear algebra. So, what exactly is a concept map? Specifically, a concept map is a diagram designed to represent the conceptual structure of a domain as a graph where the nodes of the graph represent the associated concepts and the linkages represent cognitive links between them. The originator of the concept mapping tool, Joseph D. Novak, asserted that concept maps were "developed specifically to tap into a learner's cognitive structure and to externalize, for both the learner and the teacher to see, what the learner already knows" (Novak, 1984, p. 40). Consequently, a concept map is a graphical representation of a learners' knowledge structure of a particular concept or amalgam of concepts.

Specifically, we will examine types of concept mapping activities, their theoretical bases, implementation strategies, and discuss issues of drawing implications. Examples of student concept maps will be provided to give a sense of the breadth of potential variability between students. In addition, the talk will discuss how information from the concept mapping activity informed changes in subsequent linear algebra classes. (Received September 22, 2006)