## 1035-M1-1060 Hamide Dogan-Dunlap\* (hdogan@utep.edu), UTEP, Mathematical Sciences, El Paso, TX 79968. Making Transition to Linear Independence through Set Theory and a Web Module. Preliminary report.

Many have called for gradual transition to basic abstract concepts in Linear Algebra [3]. It has been known that linear algebra students are experiencing difficulties forming an accurate understanding of vector space concepts such as linear independence [1-2, 4]. We present a gradual approach to introducing linear independence. We discuss how set theory ideas and a web module are integrated to provide a conceptual foundation for linear algebra students before introducing the formal definition of the concept.

References: 1. Dogan, H., (2003). Visual Instruction of Abstract Concepts for Non-major Students. The International Journal of Engineering Education (IJEE), 20. n4, 671-676.

2. Dorier, J., and Sierpinska, A., (2001). Research into the Teaching and Learning of Linear Algebra. In Derek Holton (Ed.) The Teaching and Learning of Mathematics of University level. Kluwer Academic Publishers, DorDrecht, 255-273.

3. Harel, G. (2000). Three principles of learning and teaching mathematics. In. J. Dorier (Ed.), On the Teaching of linear Algebra (pp. 177-1890. Dordrecht: Kluwer.

4. Hillel, J., and Sierpinska, A., (1994). On one persistent Mistakes in Linear Algebra, PME 18th proceedings, Vol. III. (Received September 18, 2007)