

1145-J5-2462

Jeffrey Slye* (jeffrey.slye@uky.edu), University of Kentucky, Department of Mathematics, 715 Patterson Office Tower, Lexington, KY 40506. *Mapping Mappings: Students' Reasoning on Morphisms in Both Linear and Abstract Algebra.*

It is well documented that students have difficulty with the more formal aspects of linear algebra, such as the abstract notions of linear transformations and vector spaces. From the point of view of abstract algebra, a linear transformation is a more restricted group homomorphism, and a vector space is a special case of a group. Many associated concepts such as images and kernels are also revisited in an abstract algebra class. It is then interesting to ask: Do students who continue on to see group theory make any connections between group theory and vector space theory?

In this talk I will present part of my dissertation study on students' ability or inability to make these connections. The data for this talk will mainly draw from semi-structured interviews and card sort activities conducted with ten undergraduate students who had encountered both linear algebra and abstract algebra. I will discuss some of the highlights of these interviews, and the interesting ways in which students use (or do not use) analogical reasoning to align concepts and make inferences. (Received September 25, 2018)