1035-97-691 **Kirk Weller*** (wellerk@umflint.edu), Department of Mathematics, University of Michigan - Flint, MI 48502. *The Learning of Infinity-Related Topics in Bridge Courses.*

Students in two bridge courses were interviewed while trying to determine whether the set $\bigcup_{k=1}^{\infty} P(\{1, 2, \ldots, k\})$ equals the set $P(\mathbf{N})$, where $\mathbf{N}$ denotes the set of natural numbers, and P denotes the power set operator. In their efforts to understand the infinite set represented by the union notation, the students constructed a variety of iterative processes. An APOS analysis of the data resulted in a description that identifies the role of the mechanisms of interiorization, coordination, and encapsulation in constructing infinite iterative processes and their states at infinity. This theoretical description is illustrated through a series of case studies and is compared to what is predicted by the Basic Metaphor of Infinity of Lakoff and Núñez (2000). Possible pedagogical implications arising from the study will be discussed. (Received September 13, 2007)