

1096-97-2140      **Nadia Monroe Mills\*** (nmonros@ncsu.edu). *Students' Understanding of the Limit of a Sequence: A Case Study of Three Pre-service Elementary Teachers.*

With a continually increasing STEM focus in education, elementary teachers must be prepared to teach all STEM subjects including mathematics. To prepare them for teaching mathematics, prospective elementary school teachers at a southeastern university in the US are required to take calculus. Case studies of three pre-service elementary students who participated in task-based interviews to solve limits of sequences problems will be presented. The concept of limits is an important and fundamental concept that forms the foundation for understanding calculus and other rigorous mathematics topics. Student misconceptions not only affect their ability to understand limits but also translate to difficulties for student understanding of infinite processes, the sum of infinite sequences, continuity of a function, the derivative and the integral (Roh, 2008). Results from this study suggest that the students with more conceptual understanding of limits use multiple representations to justify their solutions and the students did not use the formal definition for the limit of a sequence to justify their solution. Some implications for teaching are that students should be exposed to different representations, and the similarities between the limit of a function and the limit of a sequence. (Received September 17, 2013)