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Troy D. Riggs* (triggs@uu.edu), 1050 Union University Drive, Jackson, TN 38305. *Pedagogical Advantages of Teaching Calculus Using the Hyperreal Numbers.*

In this talk, I will describe the advantages in using the hyperreals to teach the essential concepts introduced in first semester calculus. We will examine specific ways that students engage concepts like “infinitely close,” “continuous at a point” and “relative growth rates” by using functions evaluated at hyperreal numbers along with Bryan Dawson’s formulation of ‘approximation’ (an equivalence relation) on the hyperreals.

In brief, students immediately recognize that they can bring their imaginations into play and build directly on their existing algebraic skills. In the typical calculus class, we see students struggling to manage the awkward limit concept. In contrast, with hyperreals the entire process has proven to encourage continual engagement and confident questioning on the part of the student. (Received September 06, 2019)