As educators we provide a syllabus outlining the course’s prerequisites, expectations and how learning will be assessed through quizzes and examinations. Students who provide correct answers within the allowed time get good grades and are labeled as good in mathematics and students who do not perform as well get lower grades. However, the diminished performance of students with lower grades can often be attributed to limitations unrelated to the breadth of their mathematical knowledge. Students that do not excel on quizzes and exams can have a good grasp of the big picture with many details, but are simply unable to provide the finished output with the time allowed. Alternatively, some high-achievers are excellent time managers who perform well without a detailed, coherent picture of the subject matter? During this presentation I will discuss my first-hand experience during my research on students’ conceptual knowledge of the limit concept with 19 calculus 2 students at a major University. The first part of my research helped me identify the limitations of traditional instructional and assessment practices. The second part of my research helped me identify successful instructive practices that could foster increased student learning and student performance (Received August 13, 2013)