Steve Benson* (sbenson@lesley.edu), Division of Natural Science and Mathematics, Lesley University, 29 Everett Street, Cambridge, MA 02138-2790. *Calculus: A Gateway to Algebra?! Preliminary report.

We all know the old adage, "you don’t really learn anything until you have to teach it,” which has some truth to it, since it’s through carefully working with and thinking about a particular topic that one builds a deep understanding. Of course, a better adage would be, "you don’t learn something until you have to use it,” which I propose to further “morph” to “it’s hard to teach something if you don’t really see where it leads.”

I will discuss our calculus course for in-service elementary and middle school teachers, sharing quotes from teachers about how participating in the calculus class(es) changed their approach to teaching pre-algebra and algebra courses in elementary and middle school. The success of this course in helping teachers see the relevance of - and improve their confidence and practice with - proportional reasoning, algebraic thinking, and problem solving has led us to reconsider our sequence of courses for preservice teachers. (Received September 09, 2009)