Statement of Teaching Philosophy

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The key to great teaching is a devotion to active learning ([3]).

A growing body of research on learning in college mathematics courses consistently indicates that an active learning approach leads to superior results in student conceptual understanding and knowledge retention, problem-solving ability, and attitude toward mathematics, as compared to the traditional lecture approach. See [2], [6], and [7] for a start. While documenting parallel benefits in a high school setting, [1] also finds evidence for an active learning environment promoting more equitable learning for all students and increased tolerance and openness to the viewpoints of others. Analysis of learning in some university physics courses showed a lecture-based method resulted in little progress in student understanding of basic concepts ([4]). Furthermore, data from [5] indicate that about half of Science/Mathematics/Engineering majors, including many high-performing students, switch to other majors before graduation, primarily for reasons that [8] attributes to the traditional lecture approach.

My conclusion is lecturing imparts little to no benefit to most students, and may even harm their attitudes toward and persistence in mathematics. Thus, even a partially developed or poorly designed active learning experience will be of more value to a class than a polished, logical, entertaining lecture.

References


