

Title: A personal journey of change: 20 years introducing technology inside and outside of the Organic Chemistry classroom.

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Abstract: Lectures lacking in student engagement have been shown to be largely ineffective with respect to learning and knowledge retention [1] particularly with conceptually difficult courses such as organic Chemistry. Deeper learning and critical thinking skills are gained through active participation inside and outside of the classroom [2][3][4][5].

My first realization that there had to be a better way than passive lecture came in 1997. Students blindly copied reactions and mechanisms off the blackboard without comprehending. I wrote at such a fast pace, covering multiple black boards that sometimes students had not finished copying what I had written by the time I started erasing the first board. My first solution was to create course notes with blanks so that we could work on questions together. However, with increasing accessibility and affordability of digital devices the way people learn and expect to be taught has fundamentally changed. Thus, I gradually shifted to online assignments, in-class student response systems and online course material to facilitate flipping the classroom. The next step in my journey in utilizing technology for promoting student success and engagement was the development and use of an interactive online textbook with weekly reading assignments.

We will discuss the gradual and then accelerated introduction of technology into and outside of the classroom. We will share student perceptions of the various course elements based on survey responses, the impact these changes have had on student success and discuss the changing expectations of students.

Elements of Engagement: The online Textbook will be presented and we will engage the audience in a conversation around the challenges and benefits of using digital devices inside and outside the classroom.

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