Engaging Science Students with Handheld Technology and Applications by Revisiting the Thayer Method of Teaching and Learning

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Abstract
Organic chemistry instructors integrate handheld technology and applications into course lecture and lab to engage students with tools and techniques students use in the modern world. This technology and applications enable instructors to re-visit the Thayer Method of teaching and learning to create an updated method that works with 21st century students. The Thayer Method is based on the premise that students are willing and capable of making substantial preparation before coming to class and lab in order to maximize efficiency of student-instructor contact time. During this student preparation phase, we engage students with handheld technology and content applications including smart phone viewable course administrative materials; “flashcards” containing basic organic chemistry nomenclature, molecular structures, and chemical reactions; mini-lectures prepared using the Smart Board Airliner Interactive Tablet for upcoming class periods and laboratory technique videos demonstrating tasks they will perform as part of laboratory experimentation. Coupled with a student friendly course text, these handheld applications enable substantial student preparation before class and lab. The method, in conjunction with handheld technology and applications, has been used with positive results in our organic chemistry courses.

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These methods incorporate the use of technology in language learning to strengthen learner engagement, facilitate the instructor’s role, and provide a structured, comprehensive learning experience for everyone involved. It’s easy to see that educational institutes need to begin transitioning to a more tech savvy way of language teaching or risk falling behind to more advanced competitors. But what other benefits does technology bring to language learning? Without technology, teaching is restricted to a geographical area, a specific school, or a specific classroom; with it, the reach is endless. #2 Blended Language Learning Courses. It’s a common misconception that mixing education and technology individualizes and singles out students in classroom. Your choice of teaching method depends on what fits you — your educational philosophy, classroom demographic, subject area(s) and school mission statement. Teaching theories can be organized into four categories based on two major parameters: a teacher-centered approach versus a student-centered approach, and high-tech material use versus low-tech material use. Interested in developing your skills as a teacher? In the student-centered classroom, teaching and assessment are connected because student learning is continuously measured during teacher instruction. Learn more about the different teaching styles that use a student-centered approach.