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Research on Technology and Physics Education

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From Facebook to smart phones, technology is an integral part of our student's lives. For better or for worse, technology has become nearly inescapable in the classroom, enhancing instruction, distracting students, or simply complicating life. As good teachers we want to harness the power we have available to impact our students, but it is getting harder as the pace of technological change accelerates. How can we make good choices in which technologies to invest time and resources in to use effectively? Do some technologies make more of a difference in student learning? In this talk we will look at research studies looking at technology use in the physics classroom—both my work and that of others—and their impact on student learning. Examples will include computers in the laboratory, web-based homework, and different forms of electronic communication. From these examples, I will draw some general principles for effective educational technology and physics education. Technology is simply a tool; the key is how we use those tools to help our students develop their abilities and understanding.