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Quite often, “research” and “teaching” are viewed as two separate entities bearing no connection to one another. I personally contend, however, that they naturally belong together as two sides of the same coin, as it were. As a researcher in computer science, it is my responsibility to discover new knowledge in my field. As a teacher, it is my obligation to take the knowledge that I have discovered and, in turn, pass it on to others. In a sense, this is a much greater responsibility. I believe that teaching forms the basis which keeps me grounded and realistic, while the research process affords me the pleasure of keeping current in my field. Teaching promotes the discipline to which I have devoted a significant portion of my life. It allows me to show people the beauty of computational science.

From my experience, there are a great many educators that employ the use of teaching methods that motivate a memorization strategy. In my opinion, this is completely ineffectual as it leads to superfluous blind regurgitation of the memorized material on tests, quizzes, and so on. This does not cultivate an *understanding* of the material; instead, it engenders a temporary knowledge that is often forgotten soon after an examination. I believe that teaching should employ the use of methods that motivates an understanding of the material. I also believe that reaching an understanding is often not enough. Encouraging students to come up with their own questions that drive the discovery of new knowledge is indispensable. I also contend that the material itself may influence teaching style. For example, theoretical concepts which form the basis for other important ideas in computer science should be presented in such a way as to motivate independent research in order to encourage the discovery of what these concepts are used for and why. Ultimately, enthusiasm in the material presented, in computer science, and in teaching promotes an environment rich in knowledge discovery opportunities for the student.

But how do people learn? This is indeed a perplexing question that, as a teacher, I continuously ask myself. Although I have no straightforward answer, my experience suggests several factors that influence how people learn. First, the independent construction of new knowledge by a student fosters opportunities to find answers to new questions by associating seemingly disparate ideas. Second, and more importantly, the students’ motivation to participate in this construction leads to an elemental confidence in their understanding of the material. This confidence propels further interest in the material which successively motivates students to work harder. Assignments can then be made more challenging, yielding more knowledge discovery for the student, more confidence, and a more successful learning experience. Ultimately, I believe that this facilitates the learning process.

There are several specific goals that, through productive teaching, I believe students should achieve. The mindset of *lifelong learning* is a critical element in a student’s “bag of tricks,” particularly in the constantly-changing field of computer science. Through active engagement in the teaching process, students should develop critical thinking and problem solving skills and be capable of using the tools they have been taught to solve problems they have never seen before. Students should be challenged to discover new knowledge and raise their own questions.

My methods of teaching specifically seek to prepare students for real-world problems by offering challenging projects that offer practical solutions. It is typical in an academic setting to remain

inside a “box” of sorts, thus promoting a perception that what students do has no consequences. In reality, what we do as computer scientists does indeed have consequences; quite often tragic ones. I plan extensively and work diligently. I tend to ask questions without necessarily knowing the answers so as to promote collaborative work in order to find the coveted answers. I tend to put more weight on research papers, projects, and presentations than on rudimentary tests, although I do ultimately recognize their importance. I also steadfastly believe that I, as a teacher, have as much to learn from my students as they do from me.

Teachers learn from their own teaching. Teachers learn from their mistakes. Teachers learn from their successes. I believe that I am a better teacher because of the research that I perform, and that I am a better researcher because I teach. Some of my best teachers have not been very much involved in research; however at the university level, there is a great need for teachers who are. It is my desire that students who take my classes leave them as better computer scientists; more importantly however, I hope that they leave my classes as better learners and as better people. The fact that I play a significant role in the development and cultivation of knowledge is a responsibility that I take very seriously and that I will always cherish.