

## Teaching Statement

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### *Teaching Philosophy*

From the moment I entered my undergraduate study back in 1995, I have already started to think about how to become a good teacher. I think effective teaching develops the kinds of students who are inspired to learn independently, who think of problems critically, and who solve problems intelligently. But for different levels of students, different types of methods should be applied.

To supervise graduate students, I will let them find their research interests first and then give them some general directions to begin based on their interests. After that, I will help them to narrow down their research topics and offer to brainstorm with them every week to continue their research progress.

For the undergraduate students, I will

- give students motivation as well as stimulate their interests to learn (this is important because without the motivation and interests, students will not know why they have to learn and understand the concepts),
- have students carefully consider the problems at hand before jumping immediately into solutions. By considering a number of different strategies for attacking a problem, opportunities arise for teaching students how to think.
- encourage collaborative exploration of solutions as a highly intelligent method for solving problems. With this teaching strategy, students will also appreciate that they are valued partners for finding solutions to problems.

When I am explaining something, I keep eye contact with the students to assess their understanding of the concept. If time is permitted, I will hand out a pre-designed series of questions of various levels of difficulty for the students to form groups to discuss those topics in greater depth. They can always learn from their discussions. Usually, undergraduate students are more demanding than graduate students. Thus I typically pay more attention and spend more time with undergraduate students.

I have experience teaching students with disabilities, am familiar with some of their needs, and have been investigating ways to engage such students. I interacted with some of them in an English speech class designed for TAs. For students with Attention-Deficit Disorder (ADD) or with vision or hearing disabilities, I will arrange to have them to meet with me individually and develop a plan for customized help.

We as teachers must also consider the best way to tackle problems in teaching. I will adjust my teaching based on students' feedbacks so that students can learn better and I also learn how to teach better. Teaching and learning are always mutual endeavors and encouraging words will go a long way.

## *The Development of Teaching Interests and Experiences in Teaching*

I became intrigued by teaching when I was in junior high school in 1988. At that time, I was a teaching assistant (teacher's helper) for mathematics at the Xiao Ming girls' high school in Taichung, Taiwan. After being the teaching assistant for six years, I decided that I wanted to teach for the rest of my life. As a result, for my Bachelor's degree I got into the mathematics department at National Taiwan Normal University (NTNU), which is the best university for developing high school teachers in Taiwan.

During my undergraduate study, I taught mathematics in the affiliated senior high school of National Taiwan Normal University (HSNU) for one month. I also attended some top teachers' classes to learn how to get students' attention. After graduating from the university, I taught mathematics at Yuan-lin junior high school for one year in Yuan-lin, Taiwan, my hometown. I really enjoyed being a teacher, especially at the time I could see my students' improvement or at those moments students suddenly understand something.

Because of the expectation of mine, I got my master's degree in Applied Mathematics at National Chung Cheng University, Taiwan, and continued my studies by pursuing the Ph.D. in computer science at Iowa State University, USA.

At National Chung Cheng University (Taiwan), I was a teaching assistant for Advanced Calculus, which was considered a difficult course for undergraduate students. My responsibilities were to solve the more challenging homework problems and teach the undergraduate students the concepts behind the homework problems until most of the students had reached a general understanding of the concepts and could successfully work through the problems.

At Iowa State University, I have been a teaching assistant (TA) for the following courses:

- CS 103: Computer Applications  
Course URL: <http://www.cs.iastate.edu/~cs103w/>  
Responsibilities: This is the largest on-line course at ISU with 1,000 students enrolled each semester. We used cutting-edge computing techniques to develop and deliver lecture materials, and applied modern pedagogy (learner-centered environment, interactive learning, supplementary material to assist ADD students, and student with vision and hearing disabilities, etc.) in order to serve a large student audience. My responsibilities were to grade homework, explain the concepts in the returned homeworks, attend to the help desk (office hours) for students to ask questions in person, and reply to students' e-mail questions.
- CS 319: Software Construction  
Course URL: <http://www.cs.iastate.edu/~sbasu/course/cs319-07/>  
Responsibilities: As TA for this course, I prepared course materials for the instructors.
- CS 311: Design and Analysis of Algorithms  
Course URL: <http://www.cs.iastate.edu/~cs311/>  
Responsibilities: Several duties were assigned to me. During the recitation, I assisted the students in reviewing concepts of difficult topics and helped them to solve harder problems. I was also responsible for providing example solutions and grading students'

homeworks and exams. These responsibilities helped me to develop the skills of explaining difficult concepts using simple examples, and understanding how to estimate students' capabilities of solving problems.

I was also the instructor of CS 319 in Spring 2008. During that semester, I investigated ways to improve the course content based on the IEEE/ACM Software Engineering Body of Knowledge (SWEBOK) report and the 2004 IEEE/ACM SE Curriculum report. Besides the topics selected by me, I let the students recommend some of the topics for discussion, giving them additional motivation to learn. Through this type of interactive learning, I found that students paid more attention to the discussions and learned more in the class.

All in all, I have great enthusiasm in classroom teaching as evidenced from my academic career as to date, and I aspire to become a master teacher someday.