Teaching Statement – Helen H. Hu

For many people, learning is a life-long passion; for me, teaching has also been a life-long passion. Even as a kindergartener, I rushed home from school to teach what I had learned that day to my patient 3-year-old brother. Over the years, I have certainly refined my teaching style, but my passion for teaching has never wavered. Below, I list courses I feel qualified to teach, describe my teaching experience, and discuss my teaching philosophy and style.

Course coverage

Since my dissertation area is computer graphics, I would enjoy teaching any introductory or advanced course in computer graphics. Additionally, I would enjoy teaching introductory courses in computer vision or scientific visualization. With a moderate degree of preparation, I would feel qualified to teach an introductory course in natural language processing or algorithms.

Experience

Before starting graduate school, I lectured for a year for the Centre for Computer Studies at Singapore’s Ngee Ann Polytechnic. Each semester, I taught three 20-student sections on two different subjects (including computer systems, probability, algebra, and calculus). For four weeks during the second semester, I also prepared and lectured to a 250-student class on numerical analysis, a new topic for the department. Also during my second semester, I served as an advisor to five final-year students on their final projects. Through my experiences over the year I learned that I enjoyed teaching full-time, and that I had a preference for teaching smaller classes of students. General concepts could be covered in lecture, but it was in smaller groups that most students really learned.

After my first semester, two lecturers and I initiated an inter-departmental web-authoring class for the best students at the polytechnic. In early 1996, the polytechnic did not host web pages for their faculty, much less their students. Nor were any web authoring tools generally available. We created an online tutorial on HTML, lectured and demonstrated examples to our students, and supervised them as they created their own personal pages. This course was the first inter-departmental class offered at the polytechnic, as well as the first web-authoring class offered at any of Singapore’s four polytechnics.

I have had fewer teaching opportunities since starting graduate school, and so have sought other teaching opportunities through volunteer work. Over the past five years, I have tutored three students in English-as-a-Second-Language or literacy twice a week through the Literacy Action Center. Literacy Action offers tutors a great deal of freedom in planning each tutoring session, and these experiences have provided me with many insights on how different students learn.

Teaching philosophy

The educational process involves time and effort from both student and teacher. While it is difficult to teach the passive student who expends no effort, I believe a good teacher can do much to motivate students and facilitate learning. I believe presenting material in an intuitive framework and encouraging active learning are keys to being a good teacher.

A carefully organized structure in all areas of a course can emphasize general concepts, provide rationale for why the new material is relevant, and explain how the new material relates to what students already know. Students comprehend and retain new material better, and they are more motivated to learn, when they understand how all the pieces “fit together.” Well-designed programming assignments can further teach and motivate students, demonstrating how theory described in lecture can be used in application. For example, in a computer graphics class, I plan to use a video game as the first programming assignment, serving as an excellent application of drawing and moving shapes on a computer screen.

I also believe in encouraging active learning in and out of the classroom, through discussions within class and group projects. I plan to lead students through discussions where they discover facts and solve problems for themselves. I believe students will assimilate more material if they have discovered the logic themselves, rather than having me lecturing facts to them. I also hope to use a class email list for all my classes, where students will be able to discuss material and answer each other’s questions.

The ultimate goal of my teaching is to teach students how to learn. By teaching students the fundamentals and encouraging analytic thinking and self-motivation, I hope they will develop into self-confident, life-long independent learners.

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