Summary of Teaching Evaluations and Philosophy

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My most recent teaching evaluations from the 2000-01 School year ranked above average within the School of Electrical Engineering and Computer Science (EECS) at WSU. EECS ranked first compared to all other units within the University. I taught Software Engineering Principles (CptS 422) in the Fall with an enrollment of 90 students (mostly seniors) spread across Washington State and managed five projects (2 teams/project) and Software Specification and Analysis (CptS 580.1/483.1) in the Spring. At the same time, I was advisor to twelve graduate students. My courses were delivered in the classroom to about 80% of the students. The others attended remotely via CCTV at branch campuses and a few attended via streaming audio (archived video). The closed circuit TV was produced in the Edward R. Murrow College of Communication at WSU. I received comments from industry regarding the relevancy of my materials and project-based approach for both of my Undergraduate/Graduate courses. I was engaged to restructure the Software Engineering curriculum, to meet with the industry advisory board members and other corporate officials in Seattle to explore other synergistic improvements regarding teaching and research.

I learned how to teach well. In the beginning my evaluations at UTA (1993-96) were average. I taught discrete structures (CSE 2315/3315) including a programming lab, software engineering (CSE 3310) and formal methods (CSE 5312 substitute lectures). At UCCS (1996-99) my evaluations were below average though I had very good evaluations from the better students. Subsequently, I sought guidance from the School of Education at WSU. Combined with my revamped efforts, I leveraged Web-based and distance learning tools, was much better organized and my evaluations showed very solid results.

In summary, my teaching evaluations have steadily improved reaching above average levels among a population of (~45) faculty teaching computer science and electrical engineering. The evaluation and assessment criteria used at WSU include the following facets, which directed my intentions:

- Professionalism and evidence of enhancing the learning environment
- Advising mentorship as well as participation in student activities and development
- Classroom teaching
    - *Learning goals* for what students will learn to do, understand as a result of taking your class.
    - *Course curriculum* including relevant/useful course content (e.g., readings, activities, assignments and presented materials)
    - *Pedagogy* used to "deliver" or "teach" content (e.g., lectures, student work groups, on-line interactions). Engage in authentic problem posing and solving? Provide your students learning opportunities through direct instruction, modeling, experience, or a combination thereof? Is your style didactic (traditional "sermon" or lecture), dialogic (interactive and conversational) or dialectic (allowing for argument and debate)?
    - *Assessment* used to determine to what extent students have met your course goals (e.g., comprehensive, systematic and fair).
    - *Alignment* or the degree to which there is logical consistency between what I wanted students to learn (defined by the syllabus), what I ask them to do in the pursuit of those learning goals, the pedagogical approach used, and the methods or criteria used to assess their progress.

WSU's Six Goals of the Baccalaureate are broad skill or knowledge domains as defined by the President's Teaching Academy: (1) creative and critical thinking; (2) quantitative and symbolic reasoning; (3) information literacy; (4) communication; (5) self in society; and (6) disciplinary specialty.

Teaching Philosophy

An education should be an opportunity to realize and reinforce your potential (talents and skills). An educator should present the problems and issues in a positive light and endeavor to draw forth the student's capabilities in addressing those issues. An education, in my view, is not a matter of pouring the facts and solutions into the student's head. Rather it should be a process of discovery and affirmation so that the results can be an honest and long-lasting resource to the student. The process should be fun, exciting, edifying, practical and productive.

It is important to establish opportunities for students to explore their creative and analytical abilities: developing guidelines for practical, challenging and innovative group projects, sending outstanding project reports to conferences, recruiting students by inviting them to weekly presentations/ discussions in our SEDS Laboratory, developing new courses related to my research, collaborating with internal/ external faculty on cross-disciplinary courses and research projects, or bringing in industry to motivate and sponsor class topics and semester projects.

Ethics, especially as taught and experienced in school is important because today's students will be tomorrow's leaders. One should not only teach the technology, making a complicated subject simple, but also instill a sense of responsibility and good character in using and applying such technology. To be effective in such an ideal, the teacher should strive in setting well-meaning standards. Honesty in the classroom should be emphasized by rewarding independent work and by appropriately rewarding the fruits of team projects. It is critical to be fair, approachable and encouraging in a practical and sensible light. Sometimes it's not a matter of answering or solving the problem as much as it is asking the right questions. For example, my software engineering (SE) courses have made it possible for students to experience and understand, within the SE problem context, the issues of professional and ethical responsibility based on limited and shared resources (e.g., common lab and common examples of artifacts) and on lectures that cover the more philosophical and theoretical issues on the impact of engineering solutions in a societal context.