STATEMENT OF TEACHING PHILOSOPHY

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My name is Stephan Ao. I have worked on intelligent hardware and enterprise software R&D, business development, and system integration support for Fortune 500 companies. I have also held several positions in start-up companies. When changing jobs, I served as a session lecturer in two colleges in Canada.

My Belief:

I believe that students learn best when they realize that learning will change themselves at the level of knowledge, attitude, or behavior, thus motivating them internally. Their views of ideas, concepts, and society will change. When they realize that learning the content of textbooks is only a part of university education, they will actively look for opportunities to learn other skills, such as intellectual skills, physical skills, and professional skills. I also found that when students receive timely feedback and have the opportunity to correct mistakes to improve learning outcomes, they are more likely to make extra efforts to achieve their learning goals.

My teaching experience in Canada has helped me realize that students' learning motivation plays a key role in their learning success. When students graduate and enter the workplace, they may find that the knowledge they've learned from textbooks may not be sufficient for the job. Problem-solving, critical thinking, communication, teamwork, and ethical skills are also needed.

Students have different goals for taking a course. I believe that a well-designed assessment strategy can enhance students' learning experience and help them master the content without stress.

My Strategies:

Combining lecturing with active learning, I enjoyed presenting knowledge and providing students with an opportunity to think about learning and to apply learning through discussion and other activities. This way students can engage themselves in learning while increasing enthusiasm and improving motivation, which helps in achieving deep learning.

Depending on class size and topics of the course, I varied content delivery methods to engage students. I used a combination of Classroom Response System (CRS), demonstration, Q&A, discussion, 1-minute paper, think-pair-share, and brainstorm, etc. for 3rd and 4th year engineering content delivery. I found this was harder to implement in large classes. Fortunately, I could employ an IM (QQ in China) to accomplish such tasks. Dividing students into chat groups according to their needs and communicating by group: talking, videoing, conferencing, screen sharing, sending/receiving any docs, are instant ways of getting feedback.

Assessment measures student's learning against course outcomes. For students to arrive at their goals, we can adopt various assessment strategies: ones that educate "leaders of tomorrow" or ones that train "followers of yesterday". In the past, I didn't realize the importance of assessment in students' choice of learning approaches, I followed the crowd and selected the easy way: a summative type of assessment.

To promote deep learning and educate "leaders of tomorrow", I'd experiment with a combination of diagnostic, formative, and summative assessment strategies for my future courses. Not increasing the workload for both the students and the teacher, I will incorporate partial automation technologies into the assessing processes.

The Impact:

Students majoring in electrical and computer engineering paid little attention to engineering mechanics courses because our profession has little to do with mechanics. In those courses, they can learn skills not found elsewhere: teamwork, effective communication, critical thinking, and problem-solving.

By introducing real-life engineering issues as micro-projects in the 3rd- and 4th-year courses, my delivery became more dynamic and non-empty. In return, it promotes deep learning, rather than rote memorization for exam recall. Students feel that taking a course is no longer just part of getting a degree or certificate. This is part of making them useful to society as problem solvers.

In Future Teaching:

Teaching is learning. I will continue to record and reflect on which factors have the greatest impact on learning, practicing combining teaching and learning to achieve the best results. I will develop an application that collects anonymous feedback on courses: materials, structure, delivery, teaching help, homework and labs/projects, and learning outcomes. This feedback is sent to AWS S3 for analysis and improvement.

(The End)