

Teaching Philosophy Statement

I believe that an education system should prepare students to creatively solve everyday problems by applying theoretical skills from their classrooms. I believe that more emphasis in the curriculum should be given on problem-solving skills with real-world applications to enhance the learning experience. In the classroom, I generally give more emphasis on creative and analytical thinking using a problem-based learning approach. I have interacted with students who come from different cultural backgrounds and have been promoting open discussion and debates. I try to establish a healthy relationship with students so that the problems they face can be easily discussed and solved. In the age of the Internet and mobile technology, students need to focus on applying information rather than to merely documenting or memorizing it. The focus needs to be on evaluating the quality of available information in the age of "fake news" used for political gains. Furthermore, we need to train students to apply knowledge and take a systematic approach to extend available knowledge to situations where there is no readily available information. Hence, we need to have a future of graduates who are not only technology driven but also can function in cases with missing information or technology with the ability to create solutions with limited technology for given problem. Furthermore, I believe that the following areas need much attention:

1. **Multidisciplinary attitude:** At times, due to the popularity of a subject area, other subject areas are not given attention and those who have unique skills in them are demotivated. I believe that the curriculum should provide students with the flexibility to nourish their natural talents rather than forcing them to compete with others. More effort in curriculum and student assessment needs to be made towards collaboration rather than competition. A number of reports show that the future workforce from the current education system will face a number of challenges. Hence, graduates with multidisciplinary skills and collaborative attitude could offer more to the workforce as software and automation transform future career-paths.
2. **Leadership skills:** I believe that graduates should be trained not only to be experts in the field but to be future leaders in the field. Hence, assessment and projects need to ensure that leadership is natured in the graduates. Students need to be made aware and trained with skills such as collaboration in diverse and multi-ethnic environments, time management and people management and interpersonal skills. I believe that training students to have leadership skills is really important to ensure successful projects and career.
3. **Research skills:** I firmly believe that basic research skills along with basics on the philosophy of science should be part of undergraduate and secondary school curriculum. Students need to be aware of research ethics, data collection, publication process and also about peer reviews for research and projects. They also need to be active in community-driven projects, such as those that involve open software development. Students need to be aware of the reproducibility of research by implementing algorithms or experimental procedures from research papers. Furthermore, we need to ensure that students learn about critiquing research papers and have discussion and debate regarding factors affecting humanity such as climate change.
4. **Assessment criteria:** I believe that assessment should move more from exams to projects especially in specialized courses. In certain cases, open book exams can be given to test students on their ability to gather quality information from the Internet in order to solve problems. This has been mainly absent in modern assessment system. Moreover, assessment should have a wide range of options that can capture skills of students coming from a wide range of background with different set of natural talents.

5. ***e-learning technologies:*** The use of e-learning technologies is important for teaching and learning. I have used e-learning systems such as Moodle for at University of the South Pacific and Canvas at the University of Sydney. Interactive learning assignments, quizzes and videos have been useful in my courses and e-learning systems are also useful for tracking student progress and also communicate with them. Along with this, community-driven programming platforms such as Github can provide hands-on experience for students in projects that are internationally deployed even before graduating. I have been promoting the use of open source technologies and Github for programming so that students can build a profile that makes them suitable for the industry. Furthermore, I have experience in running community driven MOOCs and Workshops for training research students that have participants internationally. This shows that the scope of teaching and learning is not constrained by geography and also economic status given that some of these platforms are free for distance-based learning.
6. ***Data science and artificial intelligence:*** I believe that computer science education needs to adapt itself in order to transform other fields. In recent years, methodologies in Data Science and Artificial Intelligence have gained a lot of recognition in the industry through their innovations with the evolution of the Internet and digital technologies. The growing interest and challenges in data science have made it important for research and teaching in the academic setting. Data science applications vary and with better technologies in the analysis of data, not only we will benefit in developing technology driven by artificial intelligence, but enhance understanding in the areas such as bioinformatics, climate change, and mineral exploration. I believe that the academic needs to provide vital support for research and also training so that the new set of graduates can apply data science techniques to provide solutions to the problems of the present and the future society.
7. ***Research dissemination:*** I believe that research students need be made aware of the importance of dissemination of research which need not be fixed just with the traditional mode of publishing. Research impact is as important as publication, hence we need to ensure that research students take an initiative to use modern tools and services and make their research more accessible to the general public. I believe that we need to train researchers to ensure they promote their research on social media platform, generate discussions using blogs or social groups, and translate technical content into a general public readable format in order to generate interest. Furthermore, research students need to learn related skills such as social media pages for research, the creation of videos that summarize their findings, and also documentation of open source code and data when possible for reproducibility of research findings.