Teaching Philosophy Statement by Dr Rohitash Chandra

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 to creative and analytical thinking using a problem-based learning approach [1,2]. I have experience in teaching students who come from different cultural backgrounds and have been promoting open discussion and debates. We need 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 a given problem. 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 just competition [3]. A number of reports show that the future workforce from the current education system will face a number of challenges [4]. Hence, graduates with multidisciplinary skills [5] could offer more to the workforce as software and automation transform future career paths.

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 natural in the graduates [6]. 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 firmly believe that basic research skills along with the philosophy of science [7] should be part of the undergraduate and secondary school curriculum. Students need to be aware of reproducible research as there are reports that a significant portion of scientific papers lacks it [8]. Furthermore, we need to ensure that students learn about critiquing research papers and have discussions and debates regarding factors affecting humanity such as climate change. I believe that assessment should move more from exams to projects, especially in specialized courses. In certain cases, open-book exams [9] can be given to test students on their ability to gather quality information from the Internet in order to solve problems.

I believe that experiential learning [10] has an important role in fields where creativity and problem solving go hand in hand. This is generally encountered in engineering and computer science programmes. Experiential learning theory has been at the forefront of my assessments in my recent machine learning course. I engage students with deep learning theory [11] in my lectures through lessons and exercises and then provide them with the opportunity to have hands-on experience in software development and data analysis using real-world problems from the industry. In this way, students are ready for the industry and research and can create tools for solving real-world problems.

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