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Industrial Problem Oriented Curriculum Design for the Production Practice Course

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Abstract

China's high-tech enterprises are motivated to win the championship in many industrial sectors. As one top education unit in China, Tsinghua University fuels the industry with talented human resources. For the engineering departments at Tsinghua, there is one summer course called the production practice, which trains the third-year-end undergraduates for one month in enterprises. During this course, the students work full-time under the guidance of enterprise advisors on specific projects, which involve critical, challenging, technical problems to tackle in the time scale. To achieve satisfactory learning outcomes, we work closely with the industrial partners in designing the curriculum and strengthening the course from three main aspects: (i) selecting and building a pool of enterprise bases in line with our department disciplines, (ii) proposing and evaluating the practice projects with the intention to tackle key problems for the enterprises, (iii) coordinating and engaging the three parties – enterprises, teachers, students – into a strong triangle to conduct effective teaching and learning. After several years of evolution, the curriculum has received big welcome by enterprises and students, who find and appreciate their needs met well in the course. Encouraged by the outcome, we plan to expand the curriculum to an 8-month period, substantially deepening the practice experience of students.

Keywords: curriculum design; engineering practice; high-tech enterprise; problem oriented method; production practice