

Study and Practice on Cultivation of Student Team Based on CDIO Model-----Taking TF-Oracle Club as Example

Liu Dan, Chen Changping

School of Intelligent Technology, TIANFU College of SWUFE, Mianyang, Sichuan 621000

ABSTRACT. *The article mainly introduces CDIO education model and its developing actuality at home and aboard. Taking TF-ORACLE CLUB as example, it studies the cultivation model of CDIO student team that is based on the ideas of “putting people first, promoting learning with competition” and “mutual-trust, mutual assistance and innovation” and explores its effects.*

KEYWORDS: *CDIO model, TF-ORACLE CLUB, cultivation of student team*

1. Introduction

CDIO engineering education model consists of ideas of conceiving, designing, implementing and operating. As a new engineering education model, it aims to promote students to learning actively and practically and improve abilities of teamwork, communication and comprehensive practice. CDIO engineering education model begins with Europe and America. It has been recognized and practiced in “Washington Accord” State Party Organization generally. The ideas and frame of cultivating talents has become the innovation and application of an education model, which wins widespread acclaim in society.

TF-OC is an autonomous learning organization for students, which is built by school-enterprise cooperation of TIANFU College and Oracle Academy. It keeps ideas of “open, equality, autonomy, innovation and sharing” and focuses on cultivating compound application talents who can solve complex problems. Its ideas and models of cultivating talents well meet CDIO thoughts. Therefore, our college is at centre of students. In the process of practice, it continually explores talents training model and team management model in information technology which is based on CDIO ideas.

2. Developing actuality at home and aboard

In order to strengthen cultivation of engineering ability and improve quality of training talents, ministry of education has started to conduct pilot projects for reforming CDIO education with the increasing urgency that society demands for engineering advanced talents. At present, CDIO engineering education model has been implemented in dozens of pilot schools and many non-appointed colleges, which has important impact on education model of colleges and universities in our country. On January 8, 2016, launch meeting of “National CDIO Engineering Education Alliance” is held in Shantou, Guangdong. The host is Shantou University. “National CDIO Engineering Education Alliance” is established based on “education ministry pilot working group on reform of CDIO engineering education”, which has about 160 members.

CDIO engineering education model is set up by MIT and three colleges. It spreads from occident to Asia, for example, countries like Singapore and Korea introduce CDIO engineering education model. Hundreds of colleges have joined in CDIO engineering education organization so far and their science and engineering majors all adopt CDIO engineering education model, which makes achievements in cultivating students. Practice shows that students cultivated by CDIO model can be more competent for new jobs.

3. Cultivation of student team based on CDIO model

3.1 Team cultivation –the important project of cultivation of CDIO talents

Student team is made up according to students’ expertise and interest. Most of them are interdisciplinary and transdisciplinary. Cultivation of student team is an important part of developing students’ comprehensive ability. Also it is an important handgrip to improve students’ personality, thought and quality. In the practice of CDIO engineering education model, student team plays an important role. Members collaborate with each other to finish conceiving, designing, implementing, operating, verifying and valuing together, achieving goals of enhancing professional competence and knowledge level and cultivating abilities of organizing and operating. Thus it can be seen that organizing effective student team is an important factor to succeed or not and cultivating team is an important project of CDIO cultivation talents. Members in excellent student team can play their own talents and complete tasks effectively by mutual help and efficient communication. Each member can not only enhance professional competence and understand knowledge deeply, but also improve organizing ability, cooperating ability, communicating ability and optimistic healthy quality. That is prospective target of “Course Education”.

3.2 Practice on cultivating TF-OC student team

TF-OC has formed cultivation model of CDIO student team that is based on the ideas of “putting people first, promoting learning with competition” and “mutual-trust, mutual assistance and innovation” gradually since many years of exploration and practice. What’s more, it has made great achievements in cultivating talents of IT application.

We should put people first and construct “mutual-trust” team. The first step of team cultivation is to realize identity, trust and unity between members and make contributions to common goal and collective honor actively, which can form “mutual-trust” team. TF-OC will launch a recruitment announcement for whole college and introduce property of TF-OC, cultivation ideas and learning directions in detail. Therefore, each member joins in TF-OC voluntarily on the basis of self-development recognition and they have a powerful sense of identity to the organization, which lays a solid foundation for “mutual-trust” team.

We should open platform resources and form “mutual-trust” team. Based on the first step, modes of “mentor-apprentice” and peer learning are taken. In challenging learning task and CDIO project, members communicate with each other actively, sharing solutions, tolerating each other and encouraging each other, which forms “mutual-trust” team. In this way can improve deep learning and ability level and sublimate spirit realm obviously. TF-OC sets lots of learning trends, including Oracle BIEE, Oracle EBS (FIN), PeopleSoft (HCM) and Technology. Every learning team takes open Oracle products and technology as carrier and learns actively to accomplish certain learning tasks. And it has learning discussions and shares regularly to enhance deep-learning and ability level between members continually. Meanwhile, building open lab is more convenient for students to participate in learning, experiment and discussion and increase learning efficiency.

We should learn with competition and build “innovative” team. The third step of team cultivation is mainly by means of learning with competition and is based on early good knowledge, ability and cooperation. In developing process of comprehensive CDIO project, students break through knowledge learned and use professional knowledge and information technology creatively to realize new application of technology and achieve innovation and development of new technology. That forms “innovative” team. Student innovation team which learns with competition under CDIO model divides students into many different teams. When taking part in many competitions, they are allocated tutors with different expertise. And tutors guide students directionally relying on platform of open lab and resource of school-enterprise cooperation. Student competition team is built further according to interests and talents of students, which promotes student active learning and focuses on cultivating abilities of application and engineering practice and guiding research direction. Organizing students to attend competition can inspire their potential, cultivate team-work consciousness and creative spirit, consolidate domain knowledge and enhance comprehensive practical ability. TF-OC different learning trends organize many competition teams by each semester. Under the program background of practical problems of enterprise, competition is held to

check results, which can improve comprehensive strength of student team. In 11 years of establishing the organization, seven competitions of Solutions for Business Management Informationization have been held successfully. And recommended by Oracle Academy, it attracts leading enterprise in the industry of information service, including Hand Enterprise Solutions, Beijing Xintegral Information Technology Corporation, Guangzhou SIE Consulting Co. and China Resources. We build long-term school-enterprise cooperation with these companies. About seventy talents in information management are accepted by partners every year, which gets wide recognition by the industry and forms unique talented person cultivation base of Oracle.

4. Conclusion

Under the background that our country implement CDIO engineering education model, students are requested cooperation and innovation. Thus student team cultivation has been an important project in improving talents quality. After many years of exploration and practice, it has been showed that what TF-OC carries out student team cultivation based on the ideas of “putting people first, promoting learning with competition” and “mutual-trust, mutual assistance and innovation” meets CDIO ideas. Also TF-OC can cultivate students’ abilities of self-management, teamwork and innovation practice effectively and deserve learning and promoting.

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