

Top Level Design of School School Enterprise Conjoint Talent Cultivation Project for Vocational College

Xili Chen^{1, a}

¹Fujian Business University, Fuzhou 350012, China.

^axili.chen@live.com

Abstract

This paper presents general ideas on conducting the top level design for School School Enterprise Conjoint Talent Cultivation project, which is a new type of school enterprise cooperation mode for vocational education has been drawing attention in recent years. Using top level design as a structured and systematic approach to lay out groundwork and facilitate development of project to achieve better integration of industry and education. A case study is introduced to demonstrate practical value of proposal.

Keywords

School school enterprise, School enterprise cooperation, top level design.

1. Introduction

School School Enterprise Conjoint Talent Cultivation (SSECTC) was originally proposed by S.P.Ke-Wang, a vice president of Chienkuo Technology University of Taiwan, on communication forum of cross-strait vocational colleges in Dec 2006 in China. The SSECTC expands the traditional School Enterprise cooperation or cooperation between schools, it targets to combine resources of two schools and enterprises for purpose of cultivating students who are qualified to meet vocational needs, hereby two schools normally refer to a vocational college from Fujian province and a technology university from Taiwan respectfully.

The education department of Fujian province of china formally launched SSECTC projects in 2009. The first 37 projects involved 12 vocational colleges of Fujian province and 14 universities of Taiwan, and 38 enterprises [1]. After years of practice and exploration, the Fujian Taiwan School School Enterprise projects have successfully accomplished in aspects of talent cultivation mode reform and innovation, teaching resources import, training base co-development, teachers and students' bidirectional communication, research on teaching reform on vocational education, etc [2]. However, several problems emerged in the past years. These problems included development of project partially restricted by government policy or law, imperfect mechanism impeded to achieve practical results, lack of government policy to stimulate enthusiasm of enterprises into education, etc [3]. Furthermore, high teaching costs, high difficulty of implementation, different understanding of talent training goal, difficulty in importing courses and so on became obstacles of implementation [4].

Aside from government administration aspect, the main issue is considered by digging into above-mentioned problems as having difficulty in integration of industry and education. This issue is generally existed among school and enterprise cooperation in china. The essential cause is that enterprises lack enthusiasm in education because their benefit from cooperation is less than originally expected. Therefore, it is necessary to remodel and optimize architecture of cooperation to ensure enterprise's benefit as well as to maintain sustainability of SSECTC project. An efficient way to accomplish that is to perform top level design for project.

This paper is formed as: section 2 gives brief explanation of five fundamental parts of top level design for SSECTC project. Section 3 introduces a case study of top level design that was

successfully applied to industrial engineering technique specialty of Fujian Business University on Fujian Taiwan SSECTC project. Section 4 concludes the practical results of case study.

2. Top Level Design of School School Enterprise Conjoint Talent Cultivation Project

The general meaning of top level design is to make an overall planning to systematically organize resources in order to more efficiently achieve the designated goal. Performing top level design to lay groundwork and build skeleton of SSECTC project, not only can facilitate deployment and also set the direction for further development. The content of top level design of a SSECTC project is considered as having the following five fundamental parts:

Project goal is the desired outcome that all participants commit. Although each participant has its own objective to pursue, but a general goal must be set to make sure they are in same direction. For SSECTC project, the essence of goal is to educate students who meet industrial needs.

Guiding principles are the ground rules that are necessarily to be predetermined with respect to goal of project. These principles are applied to guide actions taken in practice to secure each participant's interest, especially in case that diverse opinions occur.

Cooperation framework is the backbone of project. It constructs the architecture of project, moreover it defines how participants work together and clarifies responsibility of each participant.

Implementation route draws the path for project deployment corresponding to framework. Implementation of a SSECTC project contains various stages. The implementation route orchestrates operations and arrange resources of stages towards outcomes.

Monitoring Mechanism continuously supervises the entire process of project application to not only to minimize the gap between goal and realistic result, but also to maintain its sustainability for purpose of long term win-win situation.

3. Case Study

Fujian Business University (FBU) started SSECTC project with Chienkuo Technology University (CTU) of Taiwan and several enterprises on specialty of industry engineering technique in 2010. The implementation of top level design in reality for FBU's SSECTC project is briefly introduced in this section.

3.1. Two Goals

The project is set to have two goals. One goal is to educate as more as possible students who have elementary theory of management science and skills of independently problem analyzing and solving, innovative and creative thinking to help enterprises to refine their management on shop floor. Since Chienkuo Technology University which is one of participants firstly introduced the concept of SSECTC, the other goal is to establish a set of systematic theory by summarizing practical experiences in order to popularize application of SSECTC project to improve vocational education level for cross-strait vocational colleges.

3.2. Three Principles

Three rules are determined as principles to regulate behaviors during execution of project.

Always put benefit of enterprise in the first place. This is considered as the foundation of cooperation, and the whole project is oriented by enterprise's needs. Using this rule to acknowledge the contribution that enterprises made to project, it inspires enterprise enthusiasm and consolidates collaboration between schools and enterprises. However, the

companies involved in project must be carefully reviewed to confirm that the intern positions they offered are in accordance with specialty of students.

Competency based education is the core of talent training. Using competency based learning approach in teaching, the project created a vocational ability driven curriculum system for student under context of transforming vocational requirements into teaching objectives.

Innovation driven project development. Project is managed by means of using an innovative, and flexible attitude to solve reality problems during development. With aid of PDCA approach to continuously improve the quality and to smooth implementation, project aims to achieve long term sustainability and triple win situation.

3.3. Triangle Cooperation Framework

The framework of cooperation is illustrated in Fig.1. The essence of cooperation is to establish a systematic, scientific, and rational talent training program for teaching, it is done by combining resources and experiences of three participants, i.e., Fujian Business University, Chienkuo Technology University, and enterprises such as GSK group, DINKLE enterprise, etc. The responsibility for each participant in framework varies by different roles. The FBU makes overall planning for project, and it focuses on basic skill development of students. The CTU has decades of practical experience on industrial engineering education, and its leading experience and educational philosophy help to enhance professional skill of students. The enterprises not only provide vocational requirements, and more important is that they offer positons to provide chances for students to reinforce practical skills. Furthermore, detailed information of responsibility and degrees of involvement for each participant with respect to modules of collaboration is specified in Table 1.

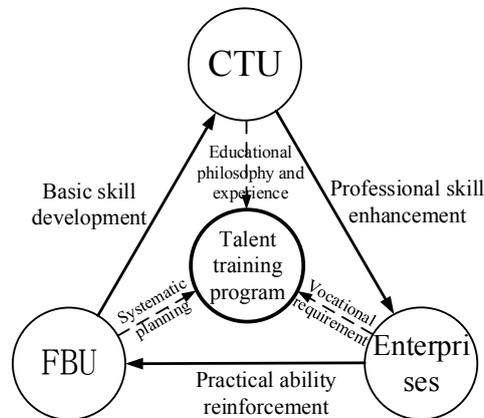


Fig 1. Cooperation framework

Table 1. Degree of involvement with respect to modules of collaboration

Module	FBU	CTU	Enterprises
Talent training program	●	●	●
Enrollment admission	●	◎	○
Student administration	●	●	◎
Quality monitoring	●	●	●
Training base development	●	●	◎
Course teaching	●	●	○
Vocational cognition practice	●	◎	◎
Internship	◎	◎	●
Thesis	●	●	●

Note: ●High, ◎Medium, ○ Low

3.4. Three Stages Implementation

The project carries out by study at FBU, study at CTU, and intern at enterprises step by step. It comprises of three stages in six semesters accordingly is shown in Fig.2. Each stage has its focus towards improvement of student’s ability.

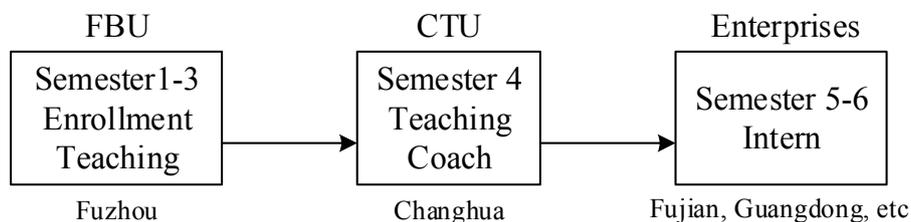


Fig 2. Three stages implementation

Phase one from semester one to three, FBU takes charge of enrollment admission and education, teaching of common basic courses and part of core courses.

Phase two is semester four, CTU teaches most core courses, as well as it coaches students for their vocational certificates which are bestowed by third party to certify the professional skills.

Phase three includes semester five and six, while students take intern at enterprises to exercise their knowledge and skills by taking part in solving problems from real cases.

3.5. Total Quality Monitoring System

A total quality monitoring system including every faculties and students as shown in Fig.3 is built to oversee all operations of project. Teaching and administration committee is constructed by delegates from FBU and CTU. The committee is at the top of total quality monitoring system, it runs based on teaching administration regulations of both universities. Activities of total quality monitoring system includes teaching supervision, lesson observation, assignment inspection, curriculum evaluation, student evaluation, surveys on teaching effectiveness and satisfaction, program of scholarship and academic probation, etc. PDCA approach is adopted to continuously improve teaching quality to assure the teaching outcome is on the same track with project goals.

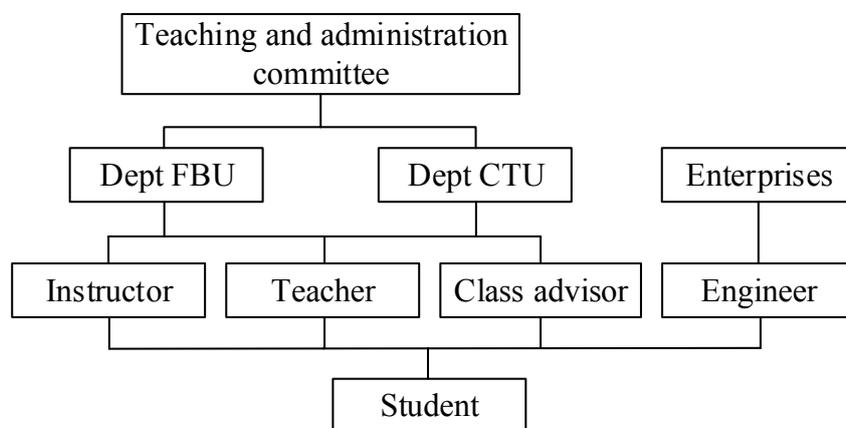


Fig 3. Total quality monitoring system

4. Conclusion

Following management by top level design, implementation of SSECTC project for Fujian Business University on specialty of industrial engineering technique has made certain

achievements. Hitherto, SSECTC project educated seven grades for total 293 students, who had obtained 887 certificates of 'INDUSTRIAL ENGINEER CERTIFICATE', 'CERTIFICATE OF PRODUCTION AND OPERATIONS MANAGEMENT TECHNOLOGIST', 'QUALITY MANAMGENT TECHNOLOGIST', 'ELEMENTARY ERP PLANNER', which are issued by Chinese Institute of Industrial Engineers. The passing rates of certificate are higher than average level. 128 students were recruited by 22 enterprises from project, and they participated in more than thirty real cases from enterprises under supervision of teachers and engineers. The enterprises become beneficiary from these real cases that student involved and they are willing to take part in project for long term. The outcomes of SSECTC project are satisfactory.

Acknowledgements

This paper was financially supported by education department of Fujian province of china (Project No.JAS14859).

References

- [1] Information on http://jyt.fujian.gov.cn/xxgk/zywj/200906/t20090602_3167244.htm
- [2] J.J. Chen: Implementation and consideration of Fujian Taiwan School School Enterprise conjoint talent cultivation project, Journal of Xiamen City Vocational College, Vol. 15(2013), p.1-4. (In Chinese)
- [3] Y.Q. Guan: Policy and regulation guarantee for School School Enterprise conjoint talent cultivation project of Fujian Taiwan universities, Journal of Fujian Radio & TV University, No.6(2014), p.65-71. (In Chinese)
- [4] P. Jiang: Difficulties and countermeasures for School School Enterprise project of Fujian Taiwan vocational colleges, Fujian Education of Information and Technology, No.2 (2010), p.19-21.