Witkey-based Teaching Pattern of Innovative and Entrepreneurial Practice for Mechanical Specialty

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Abstract. Witkey-based teaching mode of innovative and entrepreneurial practice for mechanical specialty was proposed. This system consisted of in-class and out-of-class practice as well as three practice training types namely course-oriented, project-oriented and actual demand-oriented. A feasible implementation scheme was designed to provide feasible reference for implementation of practice teaching system.

Introduction

Innovative and entrepreneurial practice teaching for students majored in machinery should be based on social demand and closely integrate market development. However, with rapidly updating manufacturing technologies and ever-changing manufacturing market demand, how to combine innovative & entrepreneurial teaching and practice is a key problem needing solution in practice teaching of mechanical specialty [1,2].

“Witkey” is the person transforming knowledge and ability into actual income through internet [3]. Witkey platform, a knowledge exchange platform solving user problems through rewarding mechanism, consists of knowledge pursuer (enterprise), knowledge provider (Witkey) and market administrator (website) [4]. Importing Witkey pattern into innovative and entrepreneurial practice teaching for mechanical specialty has the following advantages: (1) Teachers can directly dock with market through Witkey platform, and expand practice teaching contents through timeliness of Witkey tasks; (2) College students’ entrepreneurial practice activities can be driven by virtue of authenticity of Witkey tasks.

In this paper, witkey-based teaching mode of innovative and entrepreneurial practice for mechanical specialty was proposed. A feasible implementation scheme was designed to provide feasible reference for implementation of practice teaching system.

Witket Pattern of Innovative and Entrepreneurial Practice Teaching for Mechanical Specialty

Witkey pattern-based innovative and entrepreneurial practice teaching mode for mechanical specialty consists of two levels and three training types.

Two levels include in-class practice level and out-of-class practice level. The former is based on virtual studio guided by teachers and Witkey pattern is used to integrate innovative and entrepreneurial teaching and in-class teaching process; the latter undertakes innovative practice training when driven by true Witkey project demand.

Three training types include:

(a) Course-oriented innovative and entrepreneurial practice training imports Witkey tasks as cases into in-class practice teaching and integrates innovative and entrepreneurial teaching and courses in mechanical specialty to cultivate preliminary innovative and entrepreneurial skills.
(b) Project-oriented innovative and entrepreneurial practice training imports true tasks solved in Witkey website into project courses and uses professionality of Witkey tasks to cultivate professional skills and entrepreneurial skills of students majored in machinery.

(c) Actual demand-oriented entrepreneurial practice teaching use authenticity of Witkey tasks to support entrepreneurial practice activities of college students by organizing students to conduct entrepreneurial practice through Witkey platform.

Implementation Scheme

Project implementation scheme is as shown in Figure 1. And its constituent parts are as below:

(1) Setup of Witkey platform

The project team selected CASI cloud Hengli mold cloud zone (https://muju.casicloud.com) as Witkey platform. CASI cloud Hengli mold cloud zone, an industrial internet platform orienting at mold industry, provided design & manufacture and supply & demand docking and innovative and entrepreneurial service and other functions for mold industry, and it could support implementation of Witkey platform.

(2) Resource library of practice case

Resource library of practice case consists of case project and practical experience project. Case project consists of tasks released by cloud zone. Teachers will select an appropriate task and guide students to participate in competitive bidding for this task according to practice teaching plan requirements for mechanical specialty. Practical experience project consists of two parts—essence post of interactive discussion zone and record of project participation process. When teachers guide students to participate in case project, practical experience of students will be recorded, which can not only enhance their self-reflective abilities but also can enrich practical experience projects in resource library.

(3) Virtual studio

Virtual studio mainly includes team studio and individualized studio. The former is organized by teachers by arranging students with good quality and certain Witkey experience to construct a team and participate in Witkey task bidding, and students’ professional quality and skills are elevated through practice. Individualized studio is built by students on Witkey platform. Students can participate in competitive bidding of corresponding Witkey task according to their own characteristics so as to improve popularization of practice teaching.

(4) Course-oriented innovative and entrepreneurial practice teaching

Course-oriented innovative and entrepreneurial practice teaching faces freshmen and sophomores, and it realizes combination of Witkey pattern and in-class practice based on
professional basic course. Teachers will select Witkey task with not high requirement for professional knowledge and minor difficulty in case library, conduct simulation of this task, and guide students to acquire practical experience.

(5) Project-oriented innovative and entrepreneurial practice teaching

Project-oriented innovative and entrepreneurial practice teaching is implemented by facing sophomores and juniors, and the main task is to cultivate students’ professional knowledge and basic entrepreneurial skills in project course. On the one hand, teachers can import true task solved in Hengli mold cloud zone into classroom to conduct project teaching so as to establish skills of solving all kinds of practical problems and ability of adapting to society; on the other hand, with growth of Witkey level and improvement of professional knowledge and ability, teachers encourage and guide students to attempt to undertake some Witkey tasks with strong professionality, in this way, teachers aim at cultivating students’ psychological quality and sense of competition, and elevating their professional skills needed by technology-based entrepreneurship.

(6) Actual demand-oriented entrepreneurial practice training

Actual demand-oriented entrepreneurial practice training is mainly implemented in the second half year of sophomores of third year and the whole fourth year in college. Students will establish virtual studio based on Witkey platform, and participate in corresponding Witkey tasks according to their own hobbies, interests and professional expertise. They will participate in competitive bidding of complicated and large-scale Witkey tasks through team force, this is more approximate to operation pattern of true enterprises, and their entrepreneurial ability can be improved more effectively.

Conclusions

This paper proposed a witkey-based teaching mode of innovative and entrepreneurial practice for mechanical specialty. This mode includes in-class and out-of-class practice as well as three practice training types namely course-oriented, project-oriented and actual demand-oriented. This mode can provide feasible reference for implementation of practice teaching system.

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