Application research on project driven in "electric information class" classroom teaching[1]

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Abstract. In the information high speed development today, the rhythm of the social information change faster and faster. Theory teaching, practice teaching is complementary of traditional teaching method, has been difficult to arouse the study enthusiasm of contemporary college students, and it is not conducive to cultivate their comprehensive quality and practical ability, especially the development of the project and design innovation ability. In the complexity of the college teaching activity, only a good course system may not be able to really improve the teaching effect, and it can't let we achieve the goal of cultivating applied talents. So, you need to further study and solve the problem is how to improve the students' interest in learning and comprehensive quality, making "want me to learn" into "I want to learn", really improving the teaching effect. To this, we urgently need to update the traditional teaching idea. Here, we put the electric information class curriculum as the research example, in-depth study and gradually adopt the international recognized as one of the effective teaching methods - project driven teaching, then, to efficiently organize and conduct course teaching, and improve the ability of team work and explore the innovation ability.

Introduction

At present, many colleges and universities have to examine their own concept of school education level and location [1]. Among them, a handful of universities will be located in the cultivation of research talents, while the vast majority of ordinary colleges and universities will be located in the cultivation of applied talents training goal [2]. After determining the school-running idea, the vast majority of colleges and universities who’s goal is cultivating applied talents generally compression theory teaching hours, increase practice training teaching class, as well as the talents training goal and talent training plan made corresponding adjustment, formed a variety of forms, different styles of teaching mode. But, most ordinary university there are common problems is not from training target, establish the corresponding curriculum system, but too much emphasis on and pay more attention to the integrity of the professional knowledge structure [1][2]. To this, this paper puts forward the use of the project drive the construction of the professional course system design method, combining with the CDIO teaching new concept, forming the course system of electrical information engineering, maximum improving the students' comprehensive quality and practical ability, really improving the teaching effect.

Research conditions and work plan

Electrical information engineering is a badly in need of a kind of professional along with the rapid development of modern information technology and increasing demand for computer electronic talents [3]. For applied college students majoring in computer electronics, most of the students after graduation to engage in a variety of computer research and development work of the project, this kind of work is pay attention to students' practice ability and the ability to project development [4]. If lacking of actual project development experience or lacking the necessary comprehensive quality of innovation and the team cooperation spirit, the employment of college students, growth, and even the ability of sustainable development will be directly affected. To this

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end, we selected the electrical information class curriculum application and practice [3][4]. In similar courses, we make the integration of theory teaching and practice teaching, and the two courses of classroom moved from classroom to laboratory, thus providing convenience for project driven teaching, clearing the way.

Before the project driving teaching, teachers need to selects the suitable project from engineering practice, finding out the important and difficult point, putting forward the classroom goal and requirements are [5]. Then, the teachers divided the students into a number of engineering team, suggesting that in different phases of the project, students take turns as a project manager in the group, to train each student' communication skills and leadership [6]. In the process of project design and implementation, the teachers just give the necessary tips and advice, at the same time providing consulting and answering question, they can't replace the student to complete the project.

In the process of project design and implementation, for students can't solve the problem, the teacher must carry on the teaching of main points and inspiration, and suggest they make full use of the search tool, further search in the network of the solution, may also consult materials and books [5][6]. A change from passively accepting knowledge to actively seek knowledge, by tell me the way to I look for the answers, so that teachers can through each targeted projects, desire to stimulate students to acquire knowledge and develop the ability of knowledge, fully mobilizing the enthusiasm and initiative of student learning, at the same time effectively training their self-study ability and the team cooperation consciousness.

Teachers should pay attention to your role and the students' role, for the problems arising from the project learning, teachers as long as give necessary hints and advice, do not help students design directly. After the project team to complete the design task, the teacher asked each group first to make assessment by themself for their designs, finding out problems in the process of project implementation and discuss the solution. Then, each project team shows the design results to all the students, the students of other groups giving the objective and fair evaluation, pointing out their advantages and disadvantages [7]. Finally, the teacher works summary, and comments on students' project results, giving results at the scene. The end of the class, students of all the groups are required to submit to correct their problem.

Teaching model of project driven flow chart shown in figure1:

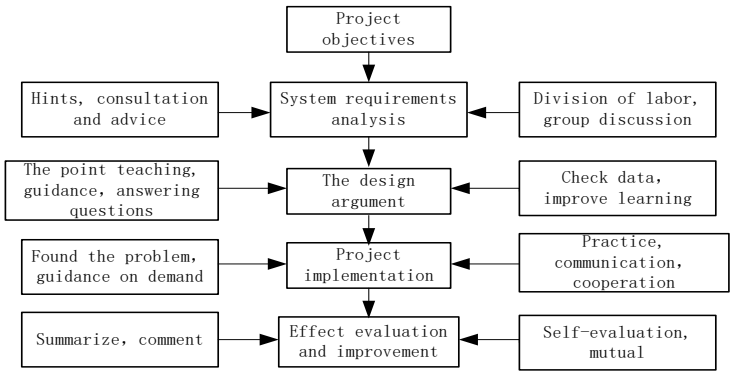

Fig.1. Teaching model of project driven flow chart

The main content and target

This thesis will focus on project driven teaching model combined with the school of electrical information class curriculum, adopting the teaching idea of CDIO (conceive, design, implement and operate), in order to improve the students' vocational quality and design ability of engineering project as the main target.

Analyzing the CDIO teaching new concept is the primary task. CDIO has life cycle from product development to product run, it helps students to learning program by active, practice, and contact way. Outline of CDIO cultivating make the ability of graduates to be divided into engineering foundation knowledge, personal ability, interpersonal ability of team and engineering system four aspects. Outline requirements use the cultivation of the comprehensive way to make the students in

the four aspects to the expected goal [7].

This research take the student as object, teachers as the guide, university-enterprise cooperation projects as the main line, based on CDIO teaching mode as the main idea, analyzing of the students' project practice ability and the improvement of professional quality. For the smooth implementation of the results and to ensure that the results of use value, using multilevel students as the research object, Teachers guide students’ aptitude in the process, reasonable using university-enterprise cooperation projects, fully show the advantage of CDIO teaching mode. Teachers put the students' learning activities combined with the actual engineering project, the teachers and students through implementation of a complete "project" gradually in-depth teaching activities, through research and solve problems to improve the students' interest in learning, to build up their confidence and cultivate their ability.

In electrical information class curriculum as the research sample, this course is a center to expand related courses, enlarging the scale of research and develop to integrate with the society, more and more applied talents. Electrical information class curriculum has very big practicability and practicality, mainly used in designing software Multisim matching the software used in the companies, more conducive to constructing university-enterprise cooperation platform, is easy to implement project driven teaching, greatly improve the students' learning interest and ability to adapt to society.

This research constructs the high quality applied electric information class engineer training mode. Currently, in colleges and universities, the electric information personnel training mode is not unified, different teachers having different teaching methods, different emphasis, different assessment standard, so, effect nature is also different. Cultivate high-quality talents with social practice is very meaningful, implementing talent education.

This study also builds university-enterprise cooperation platform. Teachers will make classroom knowledge into enterprise engineering task, letting the students to join a specific project development process, cultivating high-quality innovative talents with the whole process of comprehensive. The premise of the project teaching model drive successful implementation is according to the experience, level, knowledge of the students' existing and interest to choose suitable for their projects. The key of project driven teaching is the whole teaching process with the advancement of the project to guide the study of the course, driving the development of classroom teaching. In the entire project implementation process should not only improve students' ability of conception, design, implementation, operation, more to improve the students' moral quality, integrity, and professionalism.

The main content of the research and the target as shown in figure 2:

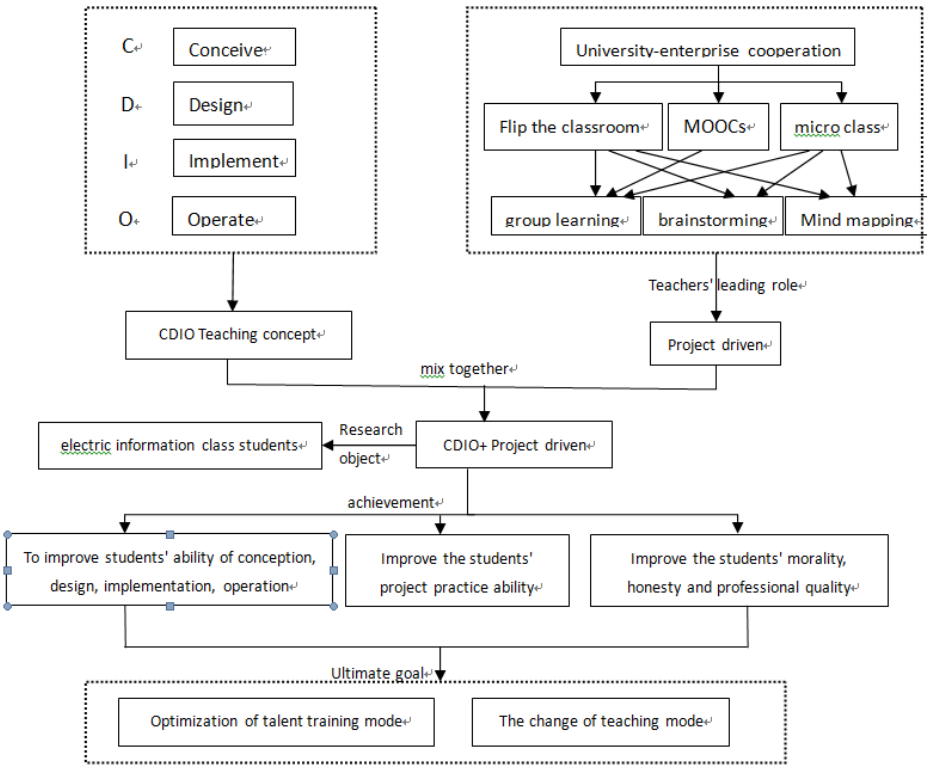

Fig.2. The main content of the research and the target

As shown in figure 2, Project driven teaching method based on CDIO is driven CDIO teaching concept and project integration. First introduce the university-enterprise cooperation project into class, teaching mode including the flip, MOOCs, micro class, group learning method, brainstorming and mind mapping method. The developing target is the electrical information class student. Secondly to improve the students' ability of conception, design, implementation, operation, to improve the students' project practice ability, improving the students' moral quality, integrity, professionalism. Ultimately change our electrical information engineering personnel training mode and teaching mode.

The students' learning activities combined with the actual project is the basic ideas of project driving teaching mode. The teachers and students through implement a complete "project" and gradually in-depth, in full swing teaching activities. Students' learning interest and confidence is also through to explore and solve problems to improve. Project driven teaching method, task driven teaching method and problem driven are similar, all are practice oriented. Project driven teaching model is very suitable for electrical information class curriculum.

The premise of the project teaching model drive successful implementation is selecting project which is suitable for students. The key of project driven teaching is guiding students' learning in the whole teaching process with the advancement of the project layer upon layer, driving the development of classroom teaching. Under the guidance of teachers, students solve problems that need through continuous exploration and independent, naturally into the learning of new knowledge, finally training the students’ skills to find problems and problem solving.

Conclusion

Unlike the traditional teaching way, project driven teaching model requires students as the center, and make the students to the situation of exploring the knowledge. The teacher in the whole teaching process is only the role to organize and guide. This takes the traditional "cramming" way of teaching in class to the student as the main body fundamentally, teacher as the leading way of teaching, enhancing student's self-confidence in a very great degree, implementing the unification of the knowledge and ability effectively, and forming a ability of sustainable development, having laid a solid foundation for their job can quickly after bear actual project development and design.

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