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Research Article

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Experimental research on teaching reform of computer graphic course based on project learning

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ABSTRACT

Project-based learning refers to the teaching activities through the implementation of a complete project carried out with the aim of organically combining the theory teaching and practice teaching, and fully exploiting the creative potential of students and improving their overall quality of solving practical problems and ability. It's the students that should bear the liability of project implementation and final evaluation. By conducting the project, students can understand and grasp the entire process and the basic requirements of every step. This paper introduces Project-based learning in Computer Graphic Teaching, adjusting and optimizing the Computer Graphic subjects teaching to make it more operational, practical, and updating the traditional teaching methods, which is of great significance with remarkable results.

INTRODUCTION

Project teaching approach refers to Project-based Learning in English, PBL in shorter form, which can be translated as "project-based learning", "thematic learning" or "topic-based learning" which, in this context, are generally called as project-based learning. The term "project-based learning" was first seen in "Project-based Learning" coauthored by educator Katz from the United States and educator Richard from Canada. " Project-based learning " theory: knowledge can be obtained by self-construction; learning is the improvement of information and knowledge, skills and behaviors, attitudes and values and other aspects; education is a conscious, systematic, continuous communication activities to meet the needs of improvement. "Computer Graphic" courses are basic and compulsory courses for students majored in economics and management. As a comprehensive and practical subject, its purpose is to train the students to master teaching basic concepts, basic theory and basic skills of the Computer Graphic, and to use Computer Graphics and regulations to solve practical problems of social, which is in line with demand of the socialist market economy to college level personnel with applied talents, complex economic management [1]. However, due to the huge Computer Graphic curriculum, and the wide range of content, and the restrictions of the faculty power, training establishments and weak foundation of students not majored in law while teaching, there are some difficulties in the teaching of Law. And the conflict of practical and artistic characteristic of Computer Graphic disciplines and abstract and rigid characteristic of tradition school teaching, especially some problems of Computer Graphic teaching philosophy, teaching methods, teaching content in the process of traditional teaching, to a large extent, affect the effectiveness of teaching and teaching quality. This paper selects the international trade major "Contract Law" as a pilot of project-based learning, and through introduction of the test cases, test results and analysis, discusses the feasibility of project-based learning used in "Law" course of colleges and universities, and gropes promotion routes based on test cases to reach training requirements of higher education.

Implementation steps of project-based learning

Detail description as shown in fig 1:

1. Determine the project: one or several project ideas are generally made by teachers and then are discussed with the students to finalize the objectives and tasks of the project.

2. Make project plan: generally the students develop the project work plan and determine the steps and procedures, which should get teacher's approval.
3. Make decisions: teachers consider various aspects of the conditions permit based on student's project plan, and make a decision to agree the project implementation.
4. Implement the project: In this phase, the students themselves have a clear division of labor and cooperation tasks and pattern of team members in the group, and then follow the work steps and procedures that have been established. Students can avoid unnecessary detours, wasting time and energy.
5. Check control: teachers make check control in the course of the project of the students in a phased manner.
6. Inspect and evaluate: After the project is completed, summarization should be done in a timely manner, in order to promote the consolidation of student knowledge. First divide several teams for students to work on their own self-assessment results, and then check the ratings by teachers. Teachers and students all together discuss, judge the problems in project work, and students learn problem-solving thinking and action features.
7. Consummate summarization: By comparing the results of the evaluation of teachers and students, summarize the entire project, and find out the cause differences in the results. Teachers get this feedback, which is good for follow-up projects.

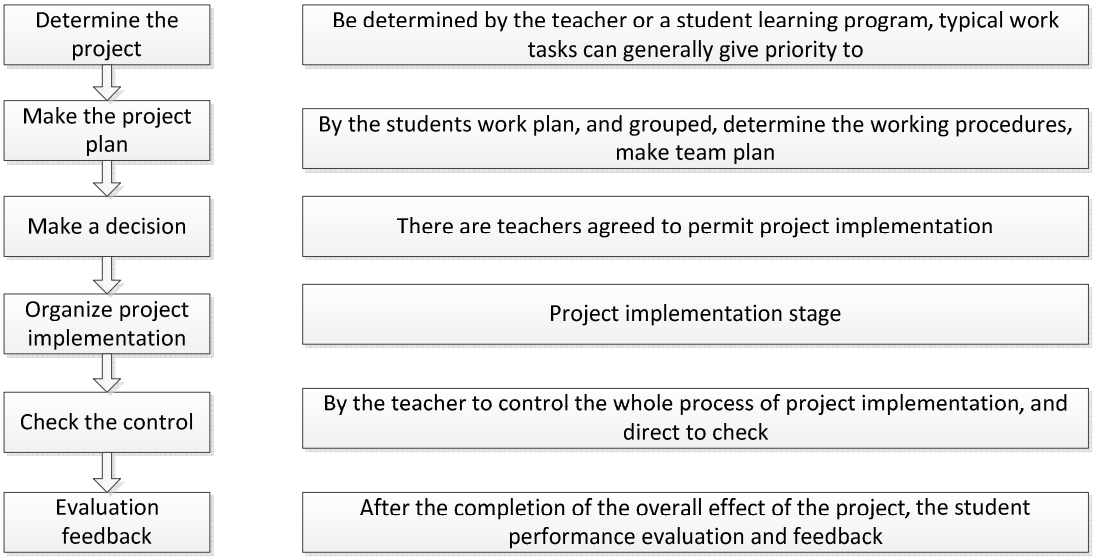

Fig 1 Implementation steps

Promote "Computer Graphic" project-based learning in the international economic and trade majors, accounting majors, e-commerce major, modern logistics and other specialty trade majors[2]. Fundamental projects (including the history of Computer Graphic, economic and legal relations, Computer Graphic adjustment targets, litigation and arbitration system, etc.) and professional fundamental projects (including corporate law, business law, bankruptcy law, etc.) are generally applicable to specialty trade, and add Maritime Law, Import and Export Duties, Customs Law and other international Law content to international economic and trade major projects; The accounting major designs professional direction projects in accordance with the CPA exam outline, and increases the Accounting Law, Negotiable Instruments Law, Securities Law, Commercial banking law, Tax Law, Fiscal Law, Finance and Government Procurement Regulations and other laws and regulations; E-commerce major increases "the report of legal value of computer records", "Model Law on electronic Funds transfer", "MLEC ", "Model Law on E-Commerce implementation Guide" and "unified electronic signature rules" for the Internet economy regulations; Modern logistics major increases "insurance Law", "procurement law, ""INCOTERM", "Customs Law" and other logistics laws and regulations.

Project test conditions

This paper attempts to take "Contract Law" as an example to explain the college Computer Graphic course of pedagogy Law: the first one is teaching conditions: first, altogether 100 people, divided into five groups with 20 people per group; Second, prepare the appropriate pen, paper, multimedia equipment, computer networks, "Contract Law" and other legal provisions; the second one is overall project; the third one is project requirement, as shown in table 1 (1) Qualified shareholders; (2) Qualified sponsor; (3) The formation of the corporate governance mechanism; (4) Opening a bank account, tax registration, business registration, etc for the company; (5) Understanding the company's alteration and termination; (6) Draw up a proposed contract; the forth one is to report contract situation for each group; the fifth one is counseling of teachers theory; the sixth one is the case reviews; the seventh one is

interpretation of cutting-edge issues of contract.

Table 1 project requirement

Group	Head	Job content	Job requirements and processes	Inspection
	A1	Responsible for the company's domicile	(1) to draft the house lease contract; (2) find the right address as required.	
	A2	Responsible for the verification of capital	Hire an accounting firm capital verification as required, and issue a capital verification report.	
	A3	Responsible for the company's articles of association	According to the requirements of "contract law" to write articles of association	
	A4	Be responsible for the company bank account	Finding the right bank, according to the requirement applies to the bank for opening bank accounts, and deposited the money in the account, and establish account, etc.	

In teaching activities, teachers will give the tasks o be resolved or need to complete to the students in the form of the project [3]. The students will make plans altogether and cooperate to complete the entire project in small groups in accordance with the actual work under the guidance of teachers. Through the above steps, the teachers can mobilize students' learning motivation in the classroom, and fully exploit the students' creative potential, so that students can learn knowledge in practice, combining the theory and practice of teaching organically improving students' comprehensive capacity to solve practical problems. "Project-based learning" is teaching methods in line with the actual situation of the students, forming and preliminarily mastering "Computer Graphic" course teaching modes and regulations teaching-guided and student-centered [4].

Test results and analysis

Test object

The object of study selected in this subject is students of international trade. Through recycling issuing student questionnaires, seminars, etc., examine the effect of project-based learning in the "Contract Law" to the students for different stages of the project. As shown in table 2,there are one person in the overall Evaluation of students on the "Contract Law" (50 persons) scoring less than 60 points, three persons scoring 60-69 points, 7 people scoring 70-79 points, 31 people scoring 80-89 points, 8 people scoring 90 -100 points. There are one people in the process assessment of teaching test of students (50 persons) on the "Contract Law" scoring less than 60 points, one people scoring 60-69 points, two persons scoring 70-79 points, 40 people scoring 80-89 points, 5 people scoring 90-100 points. There are two people in the assessment of teaching system assessment of students (50 persons) on the "Computer Graphic" scoring less than 60 points, three people scoring 60-69 points, five persons scoring 70-79 points, 28 people scoring 80-89 points, 12 people scoring 90-100 points.

Table 2 Evaluation of students

Score / Number	90-100 points		80-89 points		70-79 points		60-69 points		less than 60 points	
	experiment class	contrast class	experiment class	contrast class	experiment class	contrast class	experiment class	contrast class	experiment class	contrast class
Pre-test	6	5	8	9	7	6	12	11	9	10
Middle-test	8	6	10	9	9	7	13	12	2	9
After-test	9	7	12	8	10	8	11	10	0	10

Advantage of project-based learning

Project-based learning can cultivate the innovation and cooperation consciousness of students.

Students participate in practice through project-based learning project, learning from acceptance to active learning, transforming from a learning goal to develop their professional ability by the application of knowledge [5]. Through group learning, fully develop the students' thinking and innovative ability, not only mastering professional skills, but also enhancing their sense of innovation. In an atmosphere of teamwork, the students can develop the collaboration spirit of each other in the team.

The teaching model of project-based learning conforms to requirement of universities to the training of personnel.

Personnel training objectives of universities is "serve as the aim, employ as orient", mainly for production and social practices of the first line and personnel with primary and intermediate technical applying skills. Therefore, the key for higher education personnel training is the cultivation of students' skills, so that students have comprehensive quality and professional competence employment required. Student-centered, project-based self-study project-based learning can face the need of the entire work process; integrate the knowledge of many courses through the work

process systematic training to master the integration of knowledge, technology and skills in the practice action.

Project-based learning can improve students' personality, and healthy outlook on life and value.
Project-based learning creates a collective collaboration of a group of people; such a group breaks through our exchange of ideas, not only good for the cultivation of professional knowledge, but also conducive to foster students' personality. By learning together in small groups, students can develop a collective sense of honor and positive values and outlook of life.

CONCLUSION

The knowledge and skills of Computer Graphic courses are contemporary knowledge and qualities for modern college students, especially for economic management specialty. Its purpose is not to conduct Law teaching legal research, but to focus on applying their knowledge, and to cultivate personnel with a certain legal thinking skills, legal spiritual and legal problem-solving skills, with strong social adaptability and practical application ability, complex economic management capability [6]. In fact, the problems in traditional teaching of Computer Graphic make an impact on the effect of Law teaching. The goal of teaching is difficult to achieve, so the traditional teaching model of Computer Graphic reform ought to be carried out. While, this is a very long process, with the constraints of related concept, and with the effect of lesson plans, curricula, teaching facilities, teacher quality and other factors. The reform cannot be achieved in a day and only with the hard work of schools, teachers and students, it can be realized.

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