



## PRACTICAL ABILITY TRAINING OF BUILDING ENVIRONMENT AND ENERGY ENGINEERING UNDERGRADUATE

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### ABSTRACT

The task of higher education is to train high-level professionals for society, society needs is goal of cultivating talents in colleges and universities. The innovative spirit of contemporary economic development by relying on material, financial and material resources growth pattern to rely on human and knowledge capital growth models. Cultivation of college students' practical ability in China's "building an innovation-oriented country" plays an important role in the process. Proposed in this paper corresponds to cultivate students' practice ability of policy.

**Keywords:** Practical Ability; Building Environment And Energy, Undergraduate, Southwest Petroleum University.

### Introduction

Strengthen the cultivation of college students' practice ability, theory and practice research is needed. Theoretical research mainly is: from the Angle of philosophy, gives the new connotation of practice ability; For people narrow understanding of college students' practice ability, this article from the Angle of the generalized to the new definition of college students' practice ability and comprehensive analysis of the composition of college students' ability of practice and practice. Then mainly from the external factors that our country traditional culture on the influence of education and the internal factor namely the two point of view, higher education itself on college students' practical ability is not strong for a deep education thought. Operational research mainly is: systematically puts forward three effective approaches to cultivate college students' practice ability, namely the classroom teaching activities and students' practice ability, practice teaching and students' practical ability training, practice activities and college students' practice ability. In turn puts forward three effective practice ability training university education mode, namely, "the contract", "contract", "production", so as to provide some useful reference to strengthen college students' practice ability.

### Materials and Methods:

The practice teaching status quo in most China's universities is: (1) Old experiment teaching content, how to demonstrate type test. Experiment teaching is based on the original "heating ventilation and air conditioning engineering", set up by the main matching "fluid mechanics" and "heat transfer", "engineering thermodynamics" and "heating project" "boiler and boiler room equipment" "air conditioning refrigeration technology", "air conditioning", "industrial ventilation", such as teaching, can not cover the new undergraduate catalog enlarge the connotation of professional teaching requirements. Limited by the number field and laboratory equipment, more than the original experiment to demonstrate model experiment, the experimental teacher, explanation, operation students passively listen, look, less chance to even didn't have a chance

to start work. Students can't participate in the experiment, designing experiment scheme is more impossible, is completely passive acceptance, it is difficult to achieve the goal of training the student beginning ability and innovation ability. Laboratory equipment due to the original itself quality problem, use a few years later is difficult to guarantee the experimental effect, can't even normal experiment, adds a single laboratory equipment work load, more reduced the students' chance.

(2) Or for curriculum design the course setting, lack of comprehensive and overall. The original curriculum design of heating engineering, refrigeration engineering respectively, industrial ventilation, boiler and boiler room, air conditioning, project budget, building water supply and drainage, etc. The corresponding course design, each course design time for 1 week. Time is short, the students often can only master the fur, be tasted. Just sort out your thoughts and feelings, know how to calculate, calculate what, what before, half the time has passed. Next to drawing, generally a curriculum design drawing at least two picture, in a hurry work overtime painted figure often cannot achieve the desired effect. A course corresponds to a curriculum design, fragmented, lack of comprehensive and overall.

(3) Graduation design engineering design for simulation, the patchwork plagiarism phenomenon is serious. Graduation design is to simulate engineering design, original design topic for public building central air conditioning system, many people a group, the design plan descriptions of the same. The result is a set of design results in the same, the cultivation of student's innovation ability is very bad. Most students rely on thought is serious, such as by to, often near term, assault, a little knowledge, even natural, deal with to complete the task. Patchwork plagiarism phenomenon is serious, some even wrong place design specification.

(4) The disperse practice mode, practice effect is difficult to guarantee.

Original practice including sheet metal and pipe training,

refrigeration equipment maintenance practice, graduation practice, production practice, already has more than 10 such as heating power company in chengdu practice bases. Before school, production practice and graduation practice with the method of practice base training in rotation, shall be the responsibility of the lead teacher, practice effect is good. After moving to the new campus of longhu, in our school and training practice base outside school Distance increased, and traffic inconvenience, difficult to prior to the implementation of the lead teacher takes responsibility. Graduation practice is mainly to take students to contact our internship unit model, effect is uneven, practice hard to ensure quality. In addition, our school has yet to make full use of surrounding resources, there is no development of the campus building air conditioning refrigeration system as a practice base, and well-known enterprises such as Gree air-conditioning, Carrier, Trane air conditioning co., LTD., has yet to establish relations of cooperation.

### Results:

According to my plan of school-based professional undergraduate training courses in the corresponding experimental requirements, the original experiment or split or restructuring, originally did not open experiment, create conditions and preferential selection, ensure the experiment out rate. Such as thermocouple made of the "heat transfer" course and experiment, there is no requirement in original specialized subject teaching, but the thermocouple made with the calibration of follow-up study for a master's and doctoral students or do research and development is of great significance to the equipment manufacturing enterprises, and the most professional experiment all needs to measure the temperature parameter, and thus make and use of thermocouple thermometer is very common, if in the stage of undergraduate education can make students master the skill, will go a long way.

In recent years, the professional laboratory construction investment funds showed a trend of sustained growth, but because of increased enrollment, remains relatively insufficient, cause certain obstacles to the experimental teaching. Launched in 2009, our school, and the implementation of the characteristics and excellent professional team, professional and comprehensive pilot reform, teaching, bilingual teaching courses of undergraduate course teaching quality engineering construction projects, the support is given in funds.

This professional 2012 actively participates in professional application field characteristics, accumulated valuable experience. Should create conditions, solidarity and collaboration, concentrate superior forces and fight for success to apply for a quality project, a number of results, accumulated a certain foundation. To point with surface, and then apply for multiple quality engineering projects, relying on quality engineering construction project in our school, to promote professional construction project, to speed up and optimize the laboratory construction.

Curriculum design in our school time is determined by the program to increase, or back to time, forward to time, such as in the theoretical teaching in the layout design of the task ahead of

time. General section of classroom teaching and curriculum design calculation steps, if any discrepancy, make the appropriate adjustments, make the whole classroom teaching for the course design services. So that when it comes to which chapter let students calculate the corresponding curriculum design content, as a class assignment. Lessons learned, course design and calculation the original data obtained at the same time. 1 weeks in curriculum design, with 1 day or 1 and a half days to complete the equipment or have inappropriate data need to recalculate the equipment type selection, the rest time to draw, ensure the drawing and the effect of the curriculum design.

Undergraduate education is still given priority to with engineering design, in principle, one problem, try to do this or bobo xi really do. Such as employment internship units of actual engineering can be used as a graduation design topic, build the double tutorial system, internship units a mentor, a school teacher, the use of social resources, to ensure the quality of design. Students in internship units to complete the graduation design, the establishment of weekly report system, so as to mentor to design at their own pace. For large engineering project, can set up the design team, division of labor cooperation, block design task, cultivate students' teamwork spirit. In the process of design, inviting design institute staff to evaluate results and drawings.

### Discussion:

In building environment and energy application engineering major of our college school conditions, teachers, teaching idea all needs to improve and strengthen, a difficult task. But opportunities and challenges, the ministry of education, the government of Sichuan province and I corrected the implementation of higher education reform and development of this major should seize the opportunity to get rid of the bondage of the original teaching system, changing teaching ideas, create conditions and in the experiment teaching, course design, graduation design (paper), training practice, extracurricular technological innovation activities suit the remedy to the case of the five practice teaching links, prioritize, gradual and orderly promote the reform of practice teaching. Experiment teaching is the foundation, and need to carry out the reform and practice, the key attention on core curriculum open rate, on the basis of basic experiment to choose the right course group or direction, set up the comprehensive experimental research. In the graduation design (paper) and innovation activities in two link attaches great importance to the innovation, combining with our school, the construction of characteristic practice teaching system. Again through the course design and training practice training, strengthening the students' ability to solve practical engineering problems, and science and technology innovation ability. Multi-pronged, primary and secondary distinct, cultivate conforms to the social needs of high-quality innovative engineering personnel, service for local economic construction in Sichuan.

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