

The Exploration of Scientific Research Regurgitate Teaching in Electronic Specialty Graduation Design Teaching

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Abstract

The most direct and effective way to cultivate students' practical ability and innovation ability is to integrate scientific research with teaching and integrate scientific research results into teaching theories. This paper probes into the concrete practice of scientific research feeding back teaching, proposes to feed back teachers' achievements into the comprehensive practice teaching of students' graduation, and analyzes the concrete implementation methods, which has a certain guiding role in the cultivation of innovative talents in colleges and universities.

Keywords

Electronic Information Engineering Technology; Graduation Design; Feeds Back.

1. Introduction

As we all know, to strengthen the real economy, promote high-quality development and create high-quality life, vocational education is indispensable. Vocational education bears the heavy task of inheriting technical skills and cultivating diversified talents, which can train more application-oriented and skilled talents for promoting the development of western China in the new aera [1]. Therefore, it is a very key research point to explore a comprehensive vocational education personnel training system.

In the process of cultivating talents, graduation design, as an important practice teaching link, is to check the application of students' theoretical knowledge to practical problems, and is an important basis for students' graduation qualification and degree level [2]. This paper aims to explore a kind of college students' graduation project research and development for the improvement of practical ability to feed the teaching method, improve the quality of students' graduation project, and then train students' scientific innovation ability, improve the competitiveness of employment. At the same time, teachers' scientific research projects can be promoted faster and better with the help of students' participation. More importantly, it strengthens the relationship with enterprises and effectively alleviates the contradiction between the current talent output of universities and the talent demand of enterprises.

2. The Necessity of Scientific Research Feeding Back Teaching

Higher vocational colleges mainly promote social development and human progress through teaching activities, and its scientific research activities are based on teaching, starting from teaching content, serving for teaching and contained in the teaching process. Scientific research is an important means to promote the improvement of teaching quality[3]. It is the source for teachers to update knowledge and supplement teaching content, which is conducive to the improvement of teachers' academic level and teaching ability, and also lays a solid foundation for teachers' scientific research. Students learn the scientific research experience and cutting-edge knowledge accumulated by teachers, which broadens their horizons, deepens their absorption and understanding of professional knowledge, and strengthens their practical

application skills [4]. The transformation of scientific research methods into teaching methods, scientific research hardware resources into teaching platforms, scientific research projects as research cases extended into the classroom, scientific research results as extra-curricular reading materials can help cultivate students' awareness of scientific research and innovation ability, and enhance their ability to solve practical problems[5]. As a college teacher, we must adhere to the teaching first, on the basis of constantly improving the teaching professional level, improve the scientific research level with high quality teaching, at the same time, use scientific research to feed and promote teaching, improve the teaching quality with good scientific research achievements.

As an important part of the teaching work of Wenzhou Polytechnic, the graduation project is an important link for graduating students to study in school. The teaching process of feeding teachers' scientific research into students' graduation project is a comprehensive test of students' professional knowledge and practical skills, and also cultivates students' ability to analyze and solve problems independently.

3. Research Contents

3.1. Problems in Current Research

In the current implementation process of graduation design, there are mainly several problems as follows

- (1) The requirements of graduation design for students are relatively consistent, there is no hierarchical difficulty, reflecting the principle of teaching students according to their aptitude.
- (2) The organization process of graduation project is carried out in accordance with the normal teaching mode of the school, which is quite different from the actual management of the enterprise.
- (3) The examination method is relatively single, unable to reflect the results in the process of graduation design.

3.2. Specific Contents of the Study

3.2.1. The Selection of Graduation Project Topic

In consideration of the topic of comprehensive, typical, practical, innovative, especially considering the size of the topic, the degree of difficulty and professional fit, graduation design topic selection mainly follow the following principles:

- (1) The principle of consistency between subject content and professional training objectives.
- (2) The practical principle of combining topic selection with production practice.
- (3) Subject difficulty level, according to the principle of teaching.

Table 1. Situation table of the topic

Title	topic source	Is it suitable for stratified teaching	Knowledge points of the course covered by the topic	Project requirements
Industrial site environmental monitoring system based on Internet of Things	From actual projects, such as faculty research projects	yes	(1) Electronic information Engineering courses: Basic electronic technology, electronic CAD, single-chip technology, SMT technology and equipment, intelligent electronic product research and development; (2) Expanded knowledge: mechanical foundation, Android application platform development, etc.	(1) Complete the overall scheme design, circuit design (2) Complete hardware design and software design (3) Complete the real production and debugging (4) Appearance design and production

In accordance with the above principles and combined with the research results of teachers for many years, this paper takes the topic "Industrial Site Environmental Monitoring System based on Internet of Things" as an example to introduce the development of the whole topic. [Table 1](#) is the situation table of this topic.

3.2.2. Method of Project Development

For the development of the project, students can use enterprises to participate in the enterprise project, stay in school to participate in teachers' scientific research projects and other ways to carry out, in which the students who participate in teachers' scientific research projects, the project management mode, specific "teacher in charge, group leader responsible, team member participation" to carry out the content of the graduation project.

3.2.3. Evaluation Mode

The assessment method focuses on the process assessment and is carried out in the way of enterprise projects. The process requires the participation of all students. The assessment method is more comprehensive and the results are more reasonable.

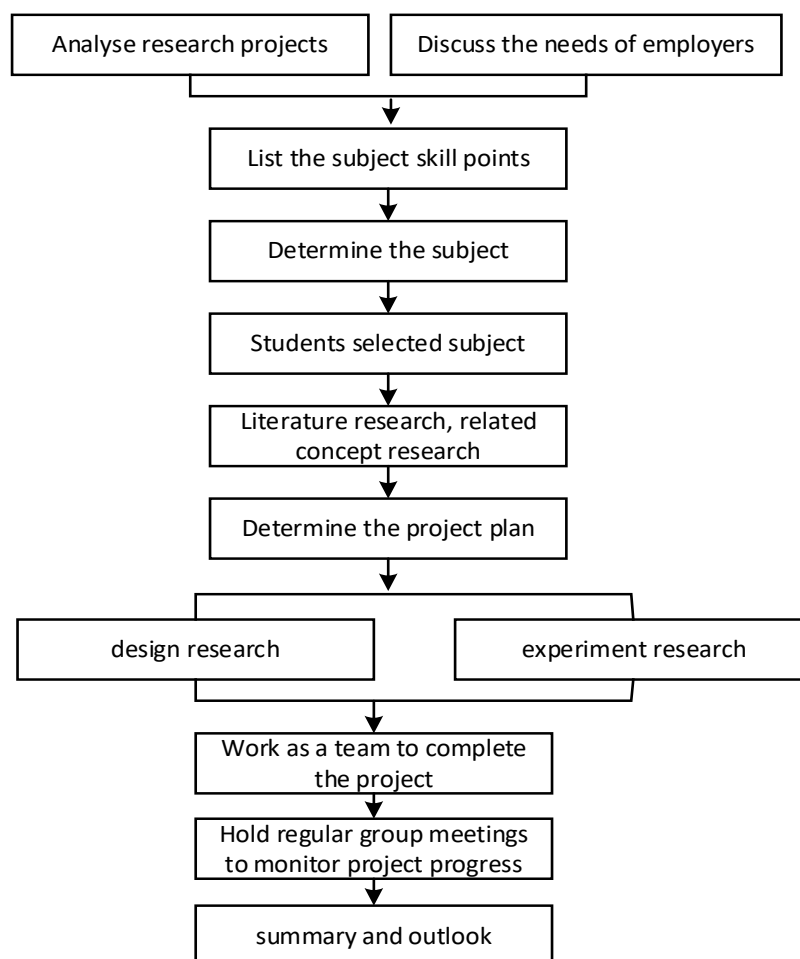


Figure 1. Implementation scheme

4. Implementation Process

First of all, according to the characteristics of students, the needs of enterprises and their own scientific research topics, teachers reasonably design a number of graduation projects for students to choose. The choice of the subject is that the student can carry on primary election according to his will, the teacher carries on fine adjustment according to the nature of the

subject again, at the same time according to the level of the student, carry on fine adjustment of the technical index of the subject again, in order to achieve the purpose of stratified education. Secondly, do a good job of project context import work. The project situation in work or life should be transformed to make it more similar to the project management mode of the actual enterprise. Whether it is to arrange work roles or to solve practical problems, the introduction of the project must be clear and attractive, and arouse students' desire to challenge. In addition, the implementation of the project is completed by students in groups. In the process of making project works, teachers are responsible for leading the progress of the project, grasping the problems of project skills, and keeping a good grasp of time and project schedule. The specific implementation plan is shown in [Figure 1](#).

Taking the design of industrial site environmental monitoring system based on Internet of Things as an example, the overall scheme of this subject is determined as shown in [Figure 2](#) after discussion with teachers. The central processing unit (CPU) is the control core of the system, which is mainly realized by four modules, which are data acquisition module, central processing module, communication module, power module and data output module. The whole system with power supply module for power supply circuit, data acquisition module is mainly to collect the value of air dust concentration and temperature and humidity, and pushes the data to the CPU for processing, again by the alarm module and data output module display, alarm and display in the final by the communication module in the dust concentration and temperature and humidity value displayed on the phone's serial port, prototype physical diagram as shown in [Figure 3](#).

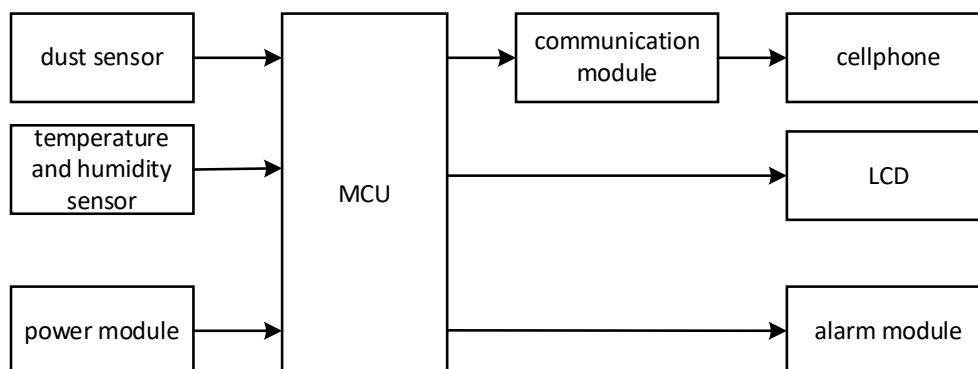


Figure 2. Block diagram of system structure



Figure 3. Prototype physical drawing

5. Conclusion

It is necessary for the development of colleges and universities to realize the integration of science and education by feeding teaching through scientific research. Colleges and universities should give full play to the advantages of scientific research resources, and constantly improve the guarantee system for scientific research to feed teaching. By implementing scientific research achievements, scientific research topics and scientific research spirit into the classroom, integrating cutting-edge knowledge and excellent achievements into teaching, promoting teaching reform, cultivating students' innovative thinking and improving their practical ability. Students to participate in scientific research and academic activities on the talent training has the positive role of two aspects: on the one hand, students to participate in the activities of scientific research can more deeply understand and experience the whole process of scientific research, not only deepen the students' understanding of knowledge, at the same time can also be expanded aspect of knowledge and is conducive to the cultivation of students' innovative ability; On the other hand, teachers can timely improve teaching methods and contents according to some problems reflected by students in the process of participating in scientific research, so as to further improve the quality of talent cultivation.

Based on electronic information engineering technology professional integrated practice teaching link of graduation, from the perspective of scientific research and feedback of teaching, students' mastery of knowledge as the core to build a closed-loop feedback control system, and explored the "base for practice teaching, innovative teaching as the soul, which is effective teaching, scientific research to promote teaching as the auxiliary pole" of the new mode of teaching. Finally, the cultivation of students to achieve our goals.

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