How to Improve Scientific Research Innovation Ability in Electronic Teaching

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Abstract

In the paper, at first the telecommunication curriculum characteristic is introduced . Then the teaching method combining student research project and classroom teaching. In the process of classroom teaching, the students inspired by the proposed innovation project, complete the design report in the form of group. In the course of the experiment, the project presented by students in the classroom teaching innovation is as the research object, guiding students to complete the innovation project. These measures can enhance students' awareness of project management and team work, and stimulate students' curiosity and creativity.

Keywords

Scientific Research, Improve, Electronic Teaching.

1. Electronic Curriculum Features

Telecommunications major is highly practical. Therefore, how to improve students' innovative ability in engineering practice has become the core problem in telecommunication course teaching. In recent years, a series of theoretical teaching and practical teaching reforms have been explored and carried out, focusing on key issues in telecommunications teaching. The student research into electronic teaching, teaching through verification, which can fully arouse students' curiosity and creativity.

2. Scientific Research

University stage is the key period for students to realize the transition from "cognitive world" to "creating world". For undergraduates, they are at the turning point of this transition. To help this young young people, in addition to learning in the university classroom theory, practice of scientific research activities and social practice, creatively provides the necessary favorable conditions for them to achieve the qualitative leap. In the university classroom, in the teaching of professional courses at the same time, teachers introduce the thinking and method of scientific research into the teaching process, the classroom will inspire students to professional theory knowledge applied to practical life, to solve practical problems. Let the student independently proposed innovative research projects, and to achieve through their own efforts, this is the college students innovation.

Students carry out scientific research practice rather than just studying theoretical knowledge. In this way, students can constantly explore the truth, apply knowledge and create knowledge. This helps to improve the students' scientific research consciousness and professional ability, strengthens the student to the professional interest in learning, develop students' horizons, to deepen the understanding of knowledge, theory of classroom teaching plays an important role in promoting .

In the era of technological innovation, the teaching of the specialized course on the one hand to strengthen the basic skills training in the curriculum design, students focus on the cultivation of comprehensive quality of scientific research; on the other hand, attention should be paid to the introduction of the latest research results at home and abroad, to stimulate students' interest in learning and motivation, the academic viewpoints and research methods, the new method throughout the undergraduate course teaching, to encourage and guide the students to the course design task as a project to complete, to further improve the students' innovation ability, is our greatest experience in teaching practice and harvest. In addition, the teacher is to guide students' scientific research guide,

teachers themselves should have certain scientific research experience, the only way to achieve the combination of teaching and research, make the students' learning research based on.

In addition, the introduction of science and technology entrepreneurship education into the curriculum design classroom is also a teaching model worthy of discussion. In the course design of the classroom, appropriate to increase some entrepreneurial knowledge, so that students understand the real process of entrepreneurship. Students under the guidance of teachers, according to their own interests and existing conditions, independent choice of different projects. Students are organized in groups, using similar entrepreneurial activities to carry out simulated entrepreneurship, so that students can improve their entrepreneurial spirit and entrepreneurial ability.

3. Combination of Classroom Teaching and Innovation

The cultivation of students' scientific research innovation ability should be implemented in every aspect of education. Among them, the most effective way is to combine classroom teaching with practice teaching. Teachers teach basic research projects and research methods in the course of teaching, and provide students with research projects related to curriculum theory, for interested students to study. At the same time, teachers should encourage students to present practical topics that they are interested in according to what they have learned in class. These previous experiences will serve as a guide and reference for the development of electronic classroom teaching and experimental teaching reform.

To carry out the innovation project mode in telecommunications in the teaching, is divided into two steps: the formation of innovation project and complete go innovation project. The first step is the formation of innovation project, inspects the student to be able to really apply the theoretical knowledge and practice of electronic. Therefore, whether a good project can be extracted or not is a measure of the students' true mastery of what they have learned

3.1 The formation of innovation project

In the classroom teaching process, the teacher first teaches the related basic theory knowledge in detail, this process's key point is must let the student know these knowledge in the practical application method. Then, take the real-life application needs as an example, the teacher inspires students to learn and think with problems. For example, when teaching the theory of timers, the teacher can introduce an embedded temperature measurement system. In this process, the teacher introduces the design scheme, the principle of subject knowledge, device selection, project implementation, project acceptance, especially some of the problems encountered in the process, experience and methods to solve the problems in the project. In this way, students' interest in learning can be well stimulated.

To encourage students to refine creative topics, teachers usually put in large assignments in class. Students are required to form a team of 2-3. Then combined with the theoretical knowledge learned in class, through the after-school data access, discuss each other, division of labor, collaboration, combined with practical problems encountered in life, put forward a specific project. Students are required to be able to present appropriate design proposals and complete project design reports.

In the project design report, it is necessary to specify the tasks each student undertakes respectively. In order to supervise the completion of the project, each of the students in the group are required oral presentations in the classroom and reported each specific work on the group's design report. In the course of the report, the teacher will listen to the student's statement and discuss with his students. Finally, the teacher comments and comments. This kind of teaching can effectively exercise and improve students' ability of project organization and verbal ability, let every student to participate in classroom discussions, play a mutual exchange and mutual learning.

At the same time, it also achieves the purpose of inspiring students' creative thinking ability and cultivating team spirit.

In addition, classroom discussions are appropriately added to address the problems encountered by students in practice. The advantage of this is that students can better understand the problems in practice and master the thinking and process of solving problems. From the actual effect, this will not only ensure the study of theoretical courses, but also train the students' engineering practice ability, and help students to deepen their understanding and mastery of theoretical knowledge. This preliminary research experience will be of great help to students in the future work practice and further studies.

3.2 The formation of scientific research

In the course experiment, students are required to be in groups. According to the project report submitted, from the needs analysis, students gradually complete the design, device selection, coding, debugging, preparation of acceptance documents and so on. This can train students to analyze problems, solve practical problems and judge decision-making ability, and analyze, summarize and summarize the ability. After the completion of the course experiment, students are required to receive the system, complete the oral report and submit the project report. The whole process is equivalent to the project acceptance meeting. According to the completed project, the design report has certain theoretical significance and practical value of the project, to encourage students to actively apply for the school or the national great project, so as to further improve the students' basic scientific research quality.

4. Conclusion

Through the teaching analysis of telecommunication in recent years, the combination of scientific research projects and classroom teaching has enabled students to broaden their horizons, improve students' interest in professional learning, and achieve good teaching results. At the same time, it improves the quality of scientific research and scientific research to a certain extent and enriches the teaching contents of basic theory courses. The introduction of teaching innovation project, can be regarded as a means of the combination of scientific research and teaching, scientific research to promote teaching, is a good opportunity to cultivate the basic research ability of students, has a very important significance to their future study and work, is an effective mode of education.

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References

- [1] Zhou Xing-yu.Cultivation of College Students' Scientific Innovation Ability through "Challenge Cup" Competition[J].Value Engineering,Vol. 12 (2014) No. 118, p. 252-253.
- [2] Plaza I., Igual R., Medrano C., et al. From companies to universities: application of R&D&I concepts in higher education teaching[J]. IEEE Transactions on Education, Vol. 3 (2013) No. 118, p. 308-315.
- [3] GAN Zao-bin,LU Hong-wei,ZHAO Yi-zhu .Exploration of the Innovation Project in the Classroom Teaching and the Course Design for Undergraduates[J].Modern Educational Technology. Vol. 24(2014) No. 8, p. 114-118.
- [4] Masaaki Ogasawara. Strategic planning of the graduate and undergraduate education in a research university in Japan[J]. Higher Education Policy, 2002(15), p. 55-60.