

# The cultivation of students' comprehensive practical ability of media technology under the background of media convergence

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## Abstract

**This paper aims to research on how to cultivate students' comprehensive practical ability of media technology, and how to introduces enterprise training projects, and uses subject competitions and students' scientific research projects as the test tools to establish a whole process and organized practical ability training system from enrollment to employment. Relying on the platform of 603 laboratory and "603 laboratory" maker space, we establish an open training mechanism; absorb and select interested students, and ensure the effective operation of the training system through perfect management systems such as daily attendance management, training and assessment, giving up the old and bringing in the new, and project training; establish a student team with media technology as the core driven by subject competition and scientific research innovation projects, Cultivate students' comprehensive practical ability and teamwork spirit.**

## Keywords

**Media convergence, media technology, practical ability.**

## 1. Introduction

On december 30, 2015, the Science and Technology Department of the State Administration of Press and Publication issued the "white paper on the construction technology of TV station integrated media platform", which promotes the integrated development of traditional media and emerging media. It is an important task to implement the central government's comprehensive deepening reform plan and promote the reform and innovation in the field of publicity and culture. It is also an important task for the radio and television industry to adapt to the profound changes in the media pattern, enhance the communication power of mainstream media, and promote the development of media. It is an important measure of public credibility, influence and public opinion guidance ability [1].

Communication University of Zhejiang, as a university training talents in the media industry, must adapt to the development and changes of integrated media. For the engineering students in the College of Media Engineering, they should not stick to the traditional training of radio and television talents. They should build a training mode of integrated media technology talents, especially the training of comprehensive practical ability of media technology, and adapt to the requirements of three screens (TV screen, computer screen) in the radio and television industry. The demand for technical talents of "two micro terminals" (wechat, microblog, client) integration.

At present, in the talent training program of various majors in our college, the links reflecting the cultivation of practical ability mainly include: course experiment, course design and graduation design. The course experiment is mainly the verification experiment of a certain knowledge point of the course. The course design is a small comprehensive design of the course

after the end of a course. Before the final graduation design, the students lack the cultivation and exercise of comprehensive practical ability throughout each course, which leads to the students do not know about what and when they can do the graduation design in the fourth year of the University, and make some decisions. The quality of the graduation project is biased, the level is low, in the case of insufficient teachers, a teacher with more than one student's graduation project is also a painful thing [2].

The cultivation and exercise of comprehensive practical ability can not be completed within one or two weeks. It needs to be cultivated slowly from the beginning of college, combined with various student projects (such as Ali geek project, college students's innovation fund project, etc.), discipline competitions (such as e-commerce competition, multi-media competition, service outsourcing competition, etc.), so that students can do a specific task purposefully and purposefully. In this way, not only the students's comprehensive practical ability has been trained, but also the students's team spirit has been cultivated [3]. At the same time, the students's literature retrieval ability, document processing ability, and language expression ability (project defense and competition defense) have also been trained. This will lay a good foundation for the graduation design of the senior and provide a strong guarantee for improving the level of graduation design.

The cultivation and training of this comprehensive practical ability is a powerful supplement to the talent training program, and an effective way to improve the level of graduation design and the quality of graduation thesis.

## **2. The concept and thinking of the implementation plan**

### **2.1. Scheme concept**

The concept of the implementation plan is to cultivate students's comprehensive practical ability of media technology, which is the exercise of students's practical ability between curriculum design and graduation design, and is the extracurricular supplement to the practical ability training in the talent training plan. Students who have won the provincial first prize or above in the subject competition can replace the graduation project. This project is a powerful supplement to the practical ability training in the talent training program.

### **2.2. Scheme idea**

The idea of this program is to select students who are interested in media technology to join the project team from the beginning of the freshman year. Under the technical guidance of the team teachers and senior students, they will learn the relevant media technology knowledge in advance between the freshmen and sophomores, master the media technology development tools, and start to apply for and do projects together with the team in sophomores subject competition. The project team has an attendance and assessment mechanism. Students who fail to complete the study within the specified time and pass the assessment, or who are not subject to team management and are absent from work, will be eliminated from the team. This project will suggest the college to introduce relevant incentive policies, so that students who have won the provincial second prize or above in subject competition can be exempted from graduation design.

## **3. Implementation plan objectives**

Step 1: To build an extracurricular practice platform aiming at cultivating the comprehensive practical ability of media technology;

Step 2: In the process of personnel training of various majors in the Institute of electronic information, it is an extra-curricular supplement to the cultivation and exercise of students's practical ability between the curriculum design and graduation design;

Step 3: Combined with the participation of media technology discipline competition, it can improve students's interest in professional learning, and make students spend more time in the laboratory and do what they are interested in, rather than wasting four years in University.

Step 4: Improve students's graduation design level and graduation thesis quality.

## 4. Specific implementation plan

Build a practice platform to cultivate the comprehensive practical ability of media technology. From the beginning of freshman year, carry out training and recruitment, train new members in basic knowledge, do a good job in basic accumulation of relevant technology, and add simple project test in the process of training, so that students can find problems in the process of test, and check and fill the gaps in the phased learning to lay a solid foundation. In this process, students are allowed to participate in various student projects and media technology subject competitions as much as possible.

### 4.1. Basic ability stage of procedure

In order to strengthen the students's ability of using C language, the basic training method is adopted, and the students are required to master the basic grammar and application ability of the program within one month. During this period, two independent assessments will be conducted for students. The main assessment contents include basic grammar ability and problem-solving ability. Students who meet the assessment requirements will be transferred to the next stage of learning.

Stage 1: C language basic ability examination mainly assesses the basic ability of students for advanced language programs, through the test questions to master the students's ability to understand and analyze the program, and preliminarily master the students's learning dynamics.

Stage 2: C language ability assessment, mainly to assess the students's ability to analyze problems and the ability to use and write programs, with simple projects as the basis of assessment, to improve students's understanding of the program.

### 4.2. Java application ability

In view of the current mainstream technology solutions and the market demand for programming language, taking Java as the object-oriented training language, students are required to master the object-oriented programming ideas and solutions, and start from the actual products to cultivate students's ability to solve practical problems with the object-oriented ideas.

The goal of this stage requires students to master the basic syntax of Java language and the basic ideas and methods of object-oriented programming language in problem analysis and solution in 2-3 months.

In this stage, three independent assessments are conducted for students, including java basic assessment, Java computer project assessment and Java Snake game project assessment.

Stage 1: The goal of java basic assessment requires students to master the basic syntax of Java and the basic concept of object-oriented.

Stage 2: Java calculator assessment objectives require students to master the ability to analyze and solve problems through object-oriented; at the same time, assessment organizers will focus on observing the examinee's standardization and code cleanliness in the process of program implementation.

Stage 3: Java Snake game project assessment objectives require students to master advanced knowledge such as event mechanism of object-oriented language. At the same time, in the

process of assessment, the assessment organizers will focus on assessing the efficiency of the program and solving problems.

### 4.3. Professional direction training

According to the different technical direction and team role in the team, the professional method training is carried out for the students who have received basic training.

#### Stage 1: Mobile client training

In the training of mobile client, mainly for the current mainstream mobile client, respectively for Android and IOS direction of technical training; in the training process, based on the object-oriented programming language, let students familiar with the basic operation mechanism and network interaction method of the corresponding client, the goal is to let students master the design and development method of mobile application and the application in mobile. In the process of implementation, the core network technology, program technology, etc.

In this stage, students are required to master the relevant methods of mobile terminal development within 2-3 months. In this stage, project-based assessment is mainly carried out twice.

Mobile application interface assessment, with the calculator of mobile application as the project content, mainly assesses the ability of students to build the corresponding mobile client interface and capture and process the interface related events.

Mobile application network communication assessment, taking the weather forecast of mobile application end as the project content, assesses the students's ability to call and process the communication interface, and assesses the students's mastery of HTTP network communication protocol and JSON data format processing and analysis.

#### Stage 2: Server side training

The server side takes J2EE as the main direction to train students's abilities in database operation, network communication and business logic processing, so as to improve students's understanding and analysis ability of Internet business.

In this stage, students are required to master the knowledge of database operation, business logic processing and client data response in Internet business application within 2-3 months.

In this stage, the assessment is carried out twice

Data operation ability assessment, with the simple student management system as the project content, assesses the students's basic operation methods such as adding, deleting and querying the database through the J2EE framework, as well as the data bearing skills of HTML pages.

The test of interface communication ability also takes the simple student management system as the project content, realizes the interface method of database related operation with spring boot method through J2EE framework, and is familiar with Tomcat server publishing mode.

#### Stage 3: Front end training

The front-end is based on the current HTML + CSS framework. Under the condition that students master the relevant foundation, they can further learn JavaScript syntax, and further learn from the current mainstream front-end interaction framework.

At the same time, master the basic requirements of the front-end syntax of JavaScript and jdoms in 3 months.

In this stage, students are assessed five times, including HTML + CSS theory assessment, HTML + CSS project assessment, JavaScript project assessment, JavaScript comprehensive project assessment and jQuery project cognitive assessment.

The main content of the theoretical assessment of HTML + CSS is the basic knowledge of HTML and CSS and other related technologies. Through the form of test questions, students's technical theory and application ability of HTML + CSS are assessed.

HTML + CSS project assessment takes the actual page as the assessment content. Through the pre-designed page PSD, students are required to realize it with HTML + CSS. It mainly assesses students's ability to use HTML + CSS technology, and also assesses students's standardization in grammar, writing and other aspects.

JavaScript project assessment aims at the ability to use JavaScript language. Through the realization of calculator on the page based on HTML + JavaScript, students's ability to realize the logic operation of JavaScript and the processing ability of tags and controls in the browser are assessed.

JavaScript comprehensive project assessment mainly takes the dynamic effect of the page as the assessment content to assess students's comprehensive application ability of HTML, CSS and JavaScript.

JQuery project cognitive assessment mainly assesses students's understanding of jQuery framework and their ability of framework application.

Under the premise of consolidating the foundation, students are encouraged to participate in the related projects of provincial disciplines competition (multimedia design competition, electronic commerce competition, Challenge Cup competition, service outsourcing competition, Internet plus competition), through project members's guidance for new members, and new members's learning experience in project development process and development experience, and accumulate project experience in completing projects. After that, according to the problems encountered in the process of project development, in-depth learning, make up for their own shortcomings, and accumulate knowledge system.

## 5. Conclusion

The construction and application of this project has played a great role in the cultivation of engineering students' comprehensive practical ability, and has made a beneficial supplement to the extracurricular supplement of the lack of comprehensive practical ability cultivation in the talent training program. The students' professional learning interest has also been improved, and the style of study has been improved, The level of graduation design and the quality of graduation thesis have also been greatly improved, the level of students' employment has also been effectively improved, and the utilization rate of laboratory has also been effectively enhanced.

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