

# Exploration of Equipment Teaching and Group Training Mode Based on Wisdom Classroom

Chenghuang Wang\*, Xiong Li, Chen Yang, Congli Wang

Non-Commissioned Officer Academy of PAP, Hangzhou, China

\*Corresponding author: 1251536026@qq.com

**Keywords:** Wisdom classroom, equipment teaching, group training.

**Abstract:** By analyzing the problems in the equipment teaching, the equipment teaching and group training mode based on wisdom classroom is proposed, which is of reference significance for improving the quality of equipment teaching and improving the ability of trainees to use and maintain the equipment.

## 1. Introduction

Under the new situation, the new military reform continues to develop, the army informatization construction continues to advance, and the degree of informatization of equipment is getting higher, which puts forward higher requirements for the training of new military personnel. The military academy is the main place to cultivate talents, bear the important task of cultivating high quality and professional new military talents for the troops with both moral and talent. The non-commissioned officer college is an important part of the service education, and should take the initiative to explore the group training mode in equipment teaching to improve the quality of equipment teaching.

"Service education must be close to the operational tasks, close to the actual forces, close to the needs of the post, highlighting the relevance", is the new requirements put forward by the military commission organs on the teaching of universities. The content of equipment teaching includes equipment principles, operation, maintenance, comprehensive application and other knowledge. Students in the learning process, often only focus on the operation, do not pay attention to the principle, resulting in the operation and maintenance skills remain only at the simple level. The author believes that the equipment teaching group training mode is relatively single, teaching methods are not flexible enough, equipment security force is not enough, resulting in equipment teaching quality is not high.

## 2. Problems and analysis of equipment teaching

Equipment teaching is different from basic theory teaching. Basic theory teaching can help students understand the content through pictures, videos and other resources, while equipment teaching requires actual equipment to support teaching. The school's equipment is relatively backward, and the number of allotted is difficult to meet the requirements of teaching, making the equipment teaching in the group training process there are several problems.

### 2.1 Equipment demonstration teaching effect is poor

Due to the large number of students and the limited space for equipment visibility, most of the students could only see the general action when watching the operation demonstration, and could not see the action essentials of each step of equipment operation. Before each group of students started training, the teacher had to repeat the explanation, and most of the time in the classroom was wasted, while the time available for each student to operate the equipment was very short. As a result, students do not learn to operate the equipment seriously.

## 2.2 The teaching process is difficult to control

Under current conditions, it is not possible to ensure that all students carry out equipment training at the same time. In the classroom, only a few students or one or two groups of students are operating the equipment, while other students have to wait. Although teachers ask the students to pay attention to the observation and learning, the students are not interested in this "distance" observation method. Students lose patience when they wait for too long. Inevitably, chatting and jostling occur. Classroom discipline is difficult to maintain.

## 2.3 More damage to teaching equipment

In the equipment training process, because students are not skilled in the operation of equipment, it is difficult to avoid the phenomenon of mis operation, and the teacher cannot correct the wrong actions in time when each student operates the equipment. Misoperation is likely to lead to equipment failure or damage, affecting the normal conduct of equipment training.

## 3. Equipment teaching and group training mode based on wisdom classroom

In order to solve the existing conditions of equipment teaching group training mode is relatively single, teaching methods are not flexible enough, equipment security force is insufficient, resulting in equipment teaching quality is not high. The course team actively explores the new mode of equipment teaching group training based on wisdom classroom. Wisdom classroom is an information-based classroom teaching service platform, which is a new information-based classroom model based on dynamic learning big data analysis and "cloud, network and end" applications [2]. The wisdom classroom is not only reflected in the classroom, but also outside the classroom, and to improve the quality of equipment teaching, we should use information technology to extend the classroom beyond the limitations of time and space, break the boundaries inside and outside the classroom, and fundamentally change the traditional closed classroom teaching mode [3].

The new model of equipment teaching group training based on wisdom classroom is mainly divided into three stages, the first is the preview stage. Through the feedback from students after completing the preview task, teachers design the teaching content to achieve targeted teaching for the lecture object. The second is the lecture stage. Using a variety of information technology means, students can watch the screen of operating equipment in real time and repeatedly to improve their participation in the practical training classroom and the accuracy of operating equipment. The third is the post-class phase. The teacher issues review tasks and uses feedback from students after completing the tasks to develop targeted review content. Through the three stages of learning, the author extends the classroom to outside the classroom. Pre-learning before class and review after class can facilitate timely checking of gaps, mobilize students' interest in learning, and enhance their sense of independent learning.

### 3.1 Preview stage

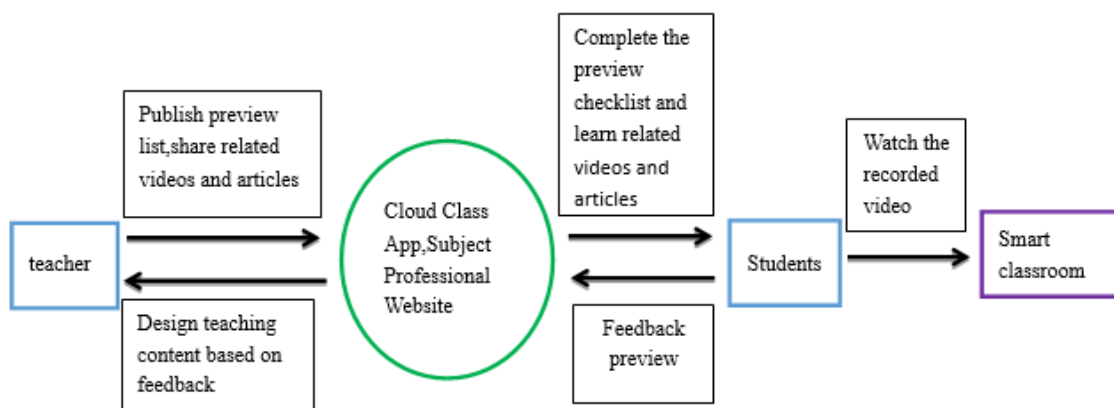


Figure 1. Preview stage

### (1) Publish preview tasks

The preview checklist allows the teacher to keep track of the students' learning and the students to see how well they have mastered their prior knowledge. It should be simple and not take up a lot of students' time. Before organizing the training class, the teacher publishes a preview list in advance through the campus network discipline professional website. The content of the preview list includes a review of the theoretical knowledge learned in the previous period, a preview of the content of this training class and the corresponding test questions. Through the APP, videos and articles related to the course are shared as a supplement and extension of the textbook content to expand the students' knowledge and increase their interest in learning.

### (2) Complete preview tasks

Students log on to the website to download the preview checklist in their dormitories or study rooms, and complete the preview tasks according to the content of the checklist. Those who have forgotten the theoretical knowledge they learned in the previous period can also watch back the recorded theoretical courses through the wisdom classroom. Students can not only learn videos and articles shared by teachers through the app, but also discuss and communicate with other students and teachers on the app. Students can accumulate the appropriate experience values in the activities as part of their formative assessment grades.

### (3) Feedback preview

After completing the preview task, students submit a preview checklist and give feedback on their preview through the campus website. The feedback includes, first, whether the test question answers can be completed independently. Second, whether they understand the course knowledge points by watching the recorded video.

### (4) Design teaching content

Firstly, according to the preview feedback from students, most of them have poor grasp of some theoretical knowledge. Teachers can design a review of theoretical knowledge, such as making a micro-lesson of a knowledge point for students to learn while waiting for the operation equipment, or uploading the micro-lesson to the campus website for students' self-study. For the difficult problems that exist in the students' preview of this lesson, select representative problems, combine with the teaching content, select or design cases, and introduce the relevant knowledge points through case analysis. Secondly, the author developed a practical training grouping scheme to match groups according to preview results. The group size is determined according to the course requirements.

## 3.2 Practical teaching stage

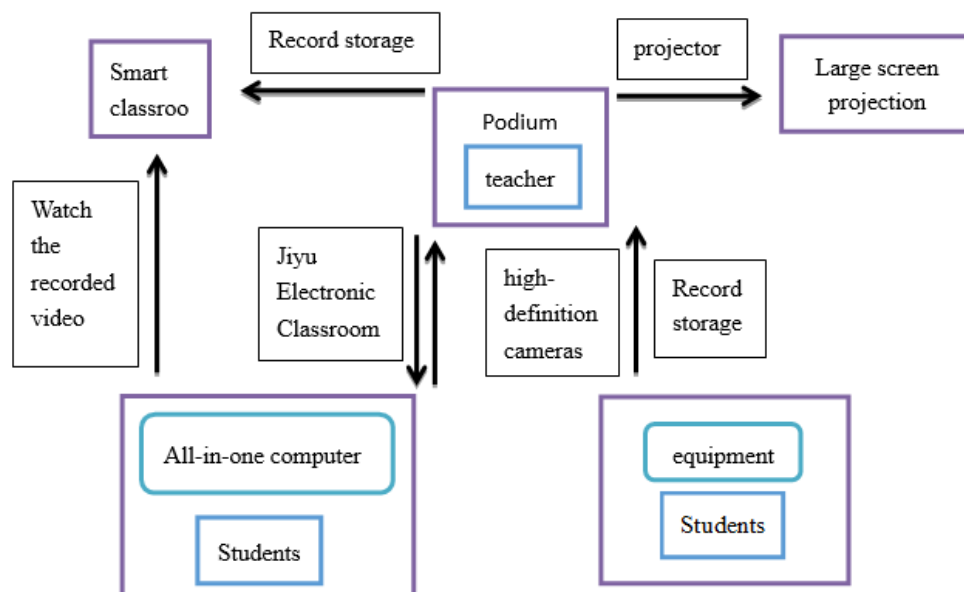


Figure 2. Practical teaching stage

### (1) Case analysis

Firstly, the case designed before the class is explained, and the time is determined according to the difficulty of the course. The purpose is to raise questions through the case study and lead students to discuss with the theoretical knowledge they have learned before the class and their preview, so as to introduce the content of the class.

For the case study part, the teacher will project the case on the big screen and share it to the student side through the software. Students can post group discussion results through the software, and the teacher selects 1-2 groups of discussion results to explain. Through interaction, students' participation in class is increased and their interest in learning is enhanced.

### (2) Equipment explanation

When the equipment is explained, it is done by the teacher and students in cooperation. Using high-definition cameras, the equipment screen is transmitted to the big screen in real time, and through the software, the screen is shared to students. They do not need to be around the equipment, everyone can see the details of the equipment and the operation steps. It can effectively solve the problem of poor classroom presentation.

### (3) Organize training

Students are grouped according to a practical training grouping plan developed prior to the class, and grouped according to the number of training classes and equipment. The teacher uses a high-definition camera to project the training process of the first two groups of students onto a large screen and share it with the students. Students waiting for training can watch the process of the first two groups of students. After the operation, students were organized to discuss what problems the first two groups of students had during the operation, and the results of the discussion were posted through the software. And then, the teacher played back the videos of the first two groups of students' operations, focusing on the problems that occurred during the students' operations and the reasons for these problems. Through this process, students have a better understanding of equipment operation precautions, and also greatly avoid misoperations, thus reducing the damage rate of equipment.

In the follow-up training, it is not necessary to focus on the procedure for each group of students. The group can be instructed for individual problems. For common problems, the training is suspended. By showing the student operation video, the problems that appear in the video are explained uniformly. While other students are waiting, they can watch the operation demonstration video repeatedly to increase their familiarity with the equipment. Students who have already operated, self-evaluate whether each step is correct by watching a video of their operation and comparing it to the demonstration video. If there are problems, they need to record them so that they can be corrected in the next training.

During the waiting process, students can not only watch back the theoretical courses through the wisdom classroom according to their mastery of the previous theoretical knowledge, but also can order the micro-class made by the teacher for knowledge point and release the existing difficult problems through the software. The teacher monitors the students' learning through the software and collects the questions posted by the students. Individual problems can be taught individually, while common problems are taught centrally. This helps students to combine theory with practice. By increasing students' participation in the classroom, students are fully motivated to learn. It can effectively solve the problem that the classroom of practical training class cannot be controlled.

### (4) Evaluation stage

The teacher collects the problems that the students have during the operation, and according to the nature of the problem, replays the video of the students' operation to explain the reason for the problem and how to avoid similar problems. Finally, by reviewing the case, students again clarify the content and target requirements of the training.

### 3.3 After-school stage

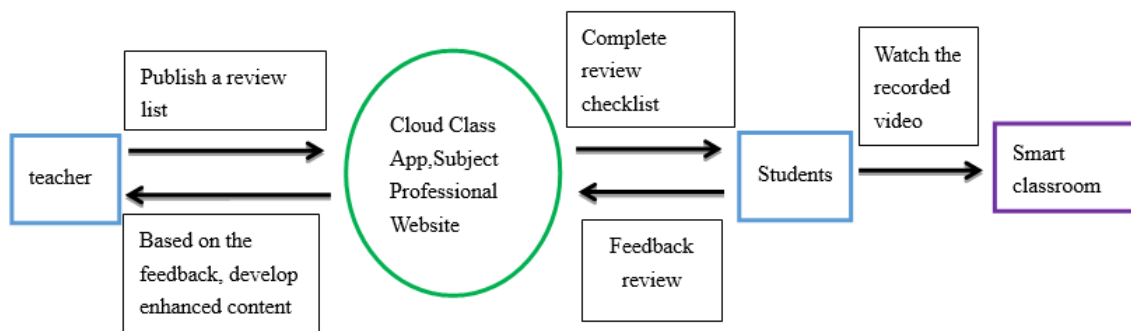


Figure 3. After-school stage

#### (1) Post review tasks

After the class, the teacher publishes a review list through the APP and campus website. The list includes test questions of theoretical knowledge points and training lessons. The purpose is to test the students' mastery of theoretical knowledge points and training lessons again.

#### (2) Complete review tasks

Students understand their learning by completing a review checklist. Depending on their mastery of the training lessons, they deepen their understanding of the practical training lessons by watching back the recorded videos through the wisdom classroom.

#### (3) Review situation

Students will give feedback to the teacher on the completion of the review checklist. The feedback will include, first, whether they can complete the review checklist independently. Second, whether or not they watched back the recorded video.

#### (4) Develop learning content

Based on student feedback, students can be communicated with online through the app. The teacher again issued test questions on the theoretical points and asked the students to watch the video of any group of students to find out the problems of the group during the operation. They are very interested in this way of learning.

## 4. Conclusions

The new model of equipment teaching and group training based on wisdom classroom combines equipment teaching with information technology means to build a three-stage progressive training system of preview-feedback-design, learning-training-feedback, review-feedback-training. It effectively solves a series of problems such as inefficient equipment teaching, difficult to control the teaching process, and damaged teaching equipment.

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