



Research on the Construction of Courses on the Use of Equipment for Job Requirements

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Abstract. Institutions should take the job requirements as the guide, clarify the basic requirements of the curriculum of the equipment application, scientifically set and dynamically update the teaching content of the courses on the application of equipment to build the teaching content system scientifically. Moreover, they should take "small class" as the primary mode, and innovate the specific teaching organisation form of the courses on the application of equipment according to the teaching objectives of each stage. It is also vital to build a dedicated informatization teaching platform to explore and improve the information-based level of the courses on the application of equipment.

Keywords: job requirements; the courses on the application of equipment; curriculum construction

1 Introduction

In recent years, the institution has adhered to the teaching philosophy of "focus on demand, highlight the key points and emphasise effectiveness" in the equipment application course. In this idea, the operational use of equipment is identified as the focus to improve the teaching content of the course, improve the structure of the teaching staff, highlight the teaching support capacity building, so that the students' ability to use equipment has been comprehensively improved. However, there are also problems such as that teaching content lags behind the development of equipment, the organisation form of "instructors teaching, students listening and taking big lessons" has not been completely changed, the teaching conditions are low and the assessment and evaluation are backward. To solve these problems, it is necessary to accelerate the construction of courses related to the use of equipment [1].

2 Construction of a perfect teaching content system for the courses on the application of equipment

The teaching content is the core of the course construction, therefore, the teaching content of the equipment application course must be adapted to the development needs of the equipment.

2.1 Clarify the basic requirements for courses on the use of equipment.

Firstly, there should be distinctive features of the times. Course content should combine general scientific and technological knowledge with high-tech knowledge, and traditional equipment skills training with IT equipment skills training. Secondly, the course content should be set around the generation of the participants' abilities. It must fully reflect the operational nature of the equipment and not compile equipment textbooks into equipment manuals. Thirdly, the practical application of the course should be extended. The courses on the application of equipment cannot only be about the equipment itself but must be combined with other courses to bring out the full understanding of the equipment.

2.2 Scientifically set the teaching content of the equipment application course in accordance with the "five close" requirements.

The first is to highlight the relevance. Institutions should highlight their own professional characteristics and avoid duplication with generic courses. The second is to highlight the demand. The teaching content should be scientifically determined by systematically considering the job requirements of the first post and the post to be promoted after graduation. The third is to highlight operability. The focus should be on the operational use of equipment, so that students can proficiently operate the first post of a variety of equipment, command information systems and other integrated applications of equipment.

2.3 Dynamic update equipment teaching content.

The rapid update of equipment determines that the teaching content of the equipment application course must be kept dynamically updated. On the one hand, the institutions should constantly follow the frontiers of equipment development, and learn to grasp the new information and dynamics of equipment in several ways, such as conducting research in other institutions. On the other hand, it is necessary to keep pace with the leapfrog development of equipment, timely enrichment of new equipment knowledge into the teaching content, keeping the teaching content scientifically and dynamically up to date according to time, costume, place and person.

3 The organisational format of teaching for innovative the courses on the application of equipment

The equipment application course should be distinctive in practice. In order to increase the proportion of operational training and increase the share of individual trainees in the teaching resources, the organisation and implementation of the course should be based on "small class size" as the main mode, and different organisational forms should be adopted in the implementation process according to the teaching objectives of each stage.

3.1 The theoretical learning phase should be taught by a combination of "intensive lectures and construes".

The teaching staff should adopt the form of "self-contained classes" and make reasonable use of various teaching methods and equipment such as physical objects, multimedia and simulation equipment [2]. The characteristics and advantages of teaching based on the "small class" should be given full play, and a variety of teaching methods such as heuristics, seminars and case studies should be used. In addition, it is important to teach the key contents in depth and the non-key contents in series, so that the students always focus on the key points of teaching and learning.

3.2 The practice phase should be organised in a manner of "group practice, one-by-one instruction".

The purpose of practice is to further digest and consolidate theoretical knowledge and establish a perceptual understanding of the operation of equipment, and form the basic operational skills of equipment. At this stage, a teaching class should be divided into 3 to 4 groups and organised in the form of a "self-contained class" for the main course instructor and a "self-contained group" for the auxiliary course instructor. The instructors will provide one-to-one guidance and help each student to complete the practical training and operation, so as to facilitate the digestion of professional theoretical knowledge and form the basic operational skills of the students.

3.3 The basic training stage should be organised in a manner of "intensification and gradual progress".

Basic training is an important part of the generation and improvement of the ability to use equipment. This stage focuses on the formation and consolidation of single professional skills[3]. Therefore, on the one hand, to increase the training intensity of this stage, it is usually necessary to focus on one skill for a period of time; on the other hand, it is necessary to arrange the training content according to the principle of "from easy to difficult, from simple to complex", and to move on to the next skill after reaching the required skill level.

3.4 The application training phase should be organised in the way of "overall training and comprehensive application".

The application training is a key link in transforming professional theoretical knowledge and individual skills to equipment application capabilities. Specifically, the time and frequency of training should be increased. Methods such as repetitive training and intensive training should be used to encourage trainees to "use" the theoretical knowledge they have learned, "link" the basic skills, "combine" the individual skills, and "connect" the professional skills, thereby improving their ability to use equipment.

4 Improving the construction of teaching conditions for the courses on the application of equipment

The teaching of the courses on the application of equipment has a special dependence on the relevant guarantee conditions, and puts forward new requirements on them. For example, the focus must be changed from subject-specific classroom construction, laboratory construction and the guarantee of equipment, to simulation classroom construction, network teaching and equipment guarantee. In addition, more funds to build professional laboratories, so as to lay a solid foundation for the subsequent professional courses.

4.1 Accelerating the construction of supporting teaching materials on various types of equipment.

Due to the adjustment of the curriculum, including the setting of the curriculum, the number of teaching hours, the teaching content, the teaching plan, and the increase of the proportion of practical classes, especially the change of the key teaching equipment, the teaching has undergone significant changes, so that the existing teaching materials can no longer adapt to the new talent training programme and curriculum standards. Therefore, the teaching materials must be revised and even rewritten accordingly. In addition to completing the construction of supporting textbooks on the principles of equipment construction, equipment application, tactical theory and tactical practice, it is also necessary to organise the preparation of guidance books, battle examples, cases and scenarios to provide support for the analysis of battle examples, case studies and operations according to scenarios.

4.2 Optimising the architecture of professional classrooms (laboratories).

As the main site for implementing practical teaching, Professional classrooms (laboratories) play a crucial role in prompting trainees to transform professional theoretical knowledge into competence qualities [4]. While it is important to combine the requirements of teaching tasks and increase funding to establish teaching materials, experimental facilities, equipment and experimental field conditions that match the

development of equipment, it is also vital to build laboratories for relevant professional basic teaching in parallel. The specialist foundation laboratory for the Introduction to Ordnance course can be built to suit the specific needs of the trainees in the Aviation Ordnance Maintenance course.

4.3 Strengthening the network construction for courses.

The use of network teaching has become an essential means of education in institutions. Establishing a virtual teaching network can solve the problem of insufficient professional teaching resources brought about by the lack of actual equipment. The construction of the equipment application class should be based on the existing network courses and further close to the frontier of equipment development. It should take the professional classroom (laboratory) as the basis, with training simulation system and related network courses, database system and teaching guarantee system as support, to build information-based teaching environment, to meet the needs of the institution's teaching and training, scientific research and other aspects.

4.4 Building new comprehensive training grounds.

The increase in the proportion of practical teaching has had a profound impact on the demand for teaching conditions. To build a field-based training environment, it should draw on the construction and management experience of large comprehensive training bases within the military, and make every effort to integrate the teaching resources of the institutions in such specialities as electromagnetic spectrum management, data chains, joint tactical communication systems and integrated command platforms in accordance with base-based construction standards, training models and management methods. Moreover, this comprehensive training ground should be a new type, which is "four-in-one", i.e. integrating guidance and monitoring, battlefield simulation, comprehensive security and site management, as well as meeting the requirements of military training under the conditions of information technology.

5 Reforming the evaluation of teaching in the courses on the application of equipment

The teaching evaluation of equipment courses is the basis for assessing professional teaching and training. It must be constructed close to the needs of combat, closely integrated with the development of equipment, and close to the provisions of the training programmes of various professions, as well as meet the assessment needs of teaching tasks, teaching content, teaching conditions, teaching methods and means.

5.1 Constructing assessment content and standards around actual combat.

The actual battle is the fundamental standard for testing the quality of military training, and it is also the basic guideline for measuring the education and training of colleges and universities. The top-down approach should be adopted to differentiate the assessment content and standards according to the different teaching classes of the institution, and to expand the assessment content with an eye on the changes in the combat style and the requirements of the transformation of the combat force generation mode. In this way, it is possible to change from the assessment of individual skills to the assessment of the overall teaching ability of the institution's curriculum, and then truly achieve the purpose of promoting education through assessment [5]. Two conditions should be met in order to assess whether a course in equipment application is "combat-oriented": firstly, it can really contribute to the improvement of the quality of teaching and training; secondly, through this criterion, the various factors in teaching can be optimally combined for coordinated development. Of all the practical teaching and training activities, only the real-world standard can fulfil these two conditions. Therefore, in order to effectively improve the quality of training, it is necessary to organise the assessment around the needs of the actual battle, using the standards of the actual battle to comprehensively and truly evaluate the quality of the practical teaching of the equipment application class. Then, it is possible to find out the gap between teaching and training and the actual battle to strengthen and improve the teaching and training work purposefully.

5.2 Adopting a scientific form to organise the teaching assessment.

The fundamental task of the teaching assessment and evaluation of the courses on the application of equipment should be to accurately reflect the degree of mastery of professional knowledge and the proficiency of practical ability of the trainees. The effect of the course teaching should be positioned on whether the trainees have mastered the basic knowledge of the equipment, whether they have formed the ability to operate and use the equipment, and whether they have adapted to the needs of their professional and technical qualities for the post. A scientific and reasonable assessment method should be adopted to change the previous phenomenon of emphasising theory over practice, results over process, knowledge over ability, and "one examination paper's result determines a lifetime" in evaluation [6]. In the assessment, the proportion of test questions on theoretical knowledge should be reduced, while increasing the ones for practical application. Moreover, a change should be made to the current situation of fragmented assessment content of practical training courses, so that the overall systematic assessment of students' equipment application ability can accurately reflect the actual comprehensive professional practical ability of students. Through the overall course assessment, students can accurately grasp the gap between themselves and the future job requirements from the assessment results. They can make targeted corrections and remedies, employers can accurately know the real ability and quality of graduating students. They can make targeted training and appointments, institutions can

accurately grasp the real gap between the ability and quality of graduating students and the job requirements from the assessment results. They can summarise the lessons learned, which allows them to adjust the professional teaching content and teaching methods, and facilitate the subsequent training of talents.

5.3 Standardising the implementation procedures of teaching assessment.

The establishment of a sound regulatory system for the assessment of the courses on the application of equipment should be combined with the requirements of the various indicators for the evaluation of teaching work in military colleges and universities. Firstly, scientific legislation on teaching assessment is a rigid guarantee for the implementation of assessment. It regulates, in the form of legislation, issues such as "what to assess, whom to assess and how to assess" to ensure that course teaching assessment runs smoothly under the regulation and restraint of the regulations. Second, it is important to establish an authoritative teaching and training assessment body because it is the organisational guarantee for the implementation of the assessment. Thirdly, a scientific monitoring mechanism for assessment needs to be established. Given the complexity of teaching and training assessment, there is a need for real feedback on the process and results of the assessment. The construction of a scientific monitoring mechanism for teaching and training assessment will not only monitor the whole process of assessment activities, but also judge the effectiveness of the assessment work, which is a complement to ensure that the assessment is fair and impartial, authentic and effective, and also helps to give full play to the positive effects of the assessment work.

6 Conclusions

The equipment application courses that meet the job requirements are of unparalleled importance to the graduates. They play a great role in effectively assuming the responsibility of the first job. All colleges and universities must strengthen research, practically do a good job in the connection with the job, and constantly promote the improvement of students' ability.

7 References

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