

Study the Teaching Mode of the Integration of Theory and Real Equipment

---- Take the Teaching Mode Reform of Aircraft Spares Sequestration Course as an Example

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ABSTRACT: In view of the problem that aircraft spares sequestration course gave priority to theory and minor attention to practice, used the teaching mode of the integration of theory and real equipment to make the curriculum reform of aircraft spares sequestration course, put forward the teaching ideas, teaching design, practice teaching and appraisal method based on the teaching mode of the integration of theory and real equipment. The teaching mode reform practice of aircraft spares sequestration course shows that the application effect of the teaching mode of the integration of theory and real equipment is significant.

KEYWORD: Integration of theory and real equipment; Teaching mode; Practice teaching; Aircraft spares sequestration

1 INTRODUCTION

Aircraft spares sequestration course is a highly technical professional courses of Aircraft Spares Management, the original mode of teaching give priority to theory and minor attention to practice, students only know how to operate, but do not know why do so operations, knowledge and action seriously imbalance. Know the theory, there is no real operating ability, which is typical of having grandiose aims but puny abilities, know but not act, is unknown; Know how to operate, but don't know why, can do it but do not know, actually not act (e.g. GUAN E.D., 2007; ZHU C.F., 2010; YU S., 2006; HE G.A., 2007). These both cases are lacking for cultivating the position ability of the students, the latter is main issues faced by the aircraft spares sequestration course. The teaching goals of the course include the three ability goals, namely the speaking skills, innovation ability, organization and management ability, and theory knowledge goal to achieve the action goals, act but not know, which would lead to the training target difficult to achieve, affects the improvement of teaching quality and the cultivation of applied and skilled talents, cause the students can't meet the requirements of the position.

The integration teaching of theory and real equipment, is a teaching model that integrating theory teaching, practical exercises, complete a teaching subjects by teachers so that students truly apply what they learn, and highlight students' professional skills training (LV W.C., 2009). The

content of the aircraft spares sequestration course includes knowledge of different archiving methods, such as seals, dry air sealed, nitrogen sequestration and so on, in which seals the inner sequestration is a key and difficult. Know how to conduct an internal sequestration is not difficult, but you would like to know why do so seal, you must first know the structure and principles of the engine and aircraft accessories, and the structure and principles of different spares often vary greatly, this part of content is more abstract, and difficult for students to understand.

In order to make students to fully understand and master the knowledge of the course, but also conform to the requirements of the vocational education reform, the author continues to explore in teaching, forming a more mature teaching method of the integration of theory and real equipment, with the theory and practice of great significance in the way to improve the quality of teaching and promote the cultivation of the position ability of students.

2 CHARACTERISTICS OF THE INTEGRATION TEACHING OF THEORY AND REAL EQUIPMENT

The purpose of the integration teaching of theory and real equipment is to make better cohesion between theory and practice, and integrate the theory teaching and practice teaching. Whose connotation is mainly to break the boundaries of traditional

theory, experiment and training class, integrate the theory teaching and practice teaching of the course, make the teaching consistent with the position demand, teaching links relatively concentrated, teaching areas directly in laboratory or internship site, according to the requirement of the vocational education training goal to integrate the teaching resources, complete a teaching subjects (SONG X.H. *et al.*, 2012). Teachers do field teaching in internship sites, combining real equipment to tell theoretical basis clearly, then demonstrate operation method and guide students to cooperate to complete one course, finally through students self-organizing to do operation and training, the teacher is responsible for the supervision and guidance. In this way, the reasonable use of real equipments is to better serve theory teaching, which is better conducive to improve the effect of theoretical teaching, and make students have a solid theoretical foundation. Then, apply theory to practice, to guide practice, serve the practice teaching, which can make students learning and know why, really realize the integration of classroom and internship site, integration of theory teaching and practice teaching, integration of knowing and acting. The integration teaching mode of theory and real equipment integrates the teaching goals, teaching contents, teaching organization, teaching implementation, teaching management each link, make full use of various teaching resources, make teaching goal more clear, the teaching effect more significant. This teaching mode can better solve the problem of disconnection between theory teaching and practice teaching, to achieve the seamless cohesion of mastering theoretical basis and cultivating operation skills, enhance teaching intuitive, fully reflect the students' subject participation function, will contribute to the improvement of teaching quality and cultivate high-quality talents.

3 THE INTEGRATION TEACHING MODE OF THEORY AND REAL EQUIPMENT IN THE APPLICATION OF AIRCRAFT SPARES SEQUESTRATION COURSE

3.1 *The teaching ideas based on the integration teaching mode of theory and real equipment*

Aircraft spares sequestration course should be with the working process of the oriented posts related to this course for students as the frame of reference, with the procedural practical knowledge of post as the main line, to streamline the declarative knowledge of theory, with "must", "enough" as the principle of selection curriculum content, i.e., with the practical application experience and organizational management methods of learning as the main goal, and "moderate", "enough" concept and the principle of the understanding as the

complementary goal. Aircraft spares sequestration course teaching should emphasize practice, highlight the cultivation of application ability, but also should attach importance to theoretical teaching, the characteristics of the integration teaching mode of theory and real equipment is of cohesion and fusion of the theoretical knowledge and practical skills in the teaching process (WU P.L., 2013).

The teaching ideas of aircraft spares sequestration course based on the integration teaching mode of theory and real equipment include:

(1) Adhere to the position education training objectives as the basis, based on the position in the supply chain management professional talent training for aircraft spares sequestration course and the characteristics and characteristics of this technology, outstanding application ability and organization-management ability, full attention to the combination of "teaching, learning and doing".

(2) Follow the objective law of people understand and accept things, teaching should be distinguished, from easy to difficult, step by step, from the analysis of the principle and the structure of the equipment to the oil sequestration method, finally to the concrete operation applications.

(3) Cultivate the innovation ability in teaching, adopt the effective teaching methods, on the basis of mastering theory and sequestration process, guide students thinking whether or not the existing process can meet the requirement of sequestration and how to improve it.

(4) Emphasize ability training of students as the center, teaching practice course can be divided into accessories, engine oil seal, dry air sealed a few broad categories, the first subject teaching of each categories is dominant by teachers, other subsequent similar course teaching is dominated by the students, who according to the first subject to draw inferences about other cases from one instance, self-study, independent design, implementation, and evaluation shall be conducted by teachers. Adopt modular teaching in each subject, arrange some modules to students, still according to the teaching mode of self-study, independent design, implementation, teachers evaluation to do teaching.

(5) Practice is the only way to form ability, so should strengthen the operation exercise of the sequestration technology and sequestration organization-management ability, implemented methods including group implementation, position rotation or implementation in stages, etc.

3.2 *The teaching design based on the integration teaching mode of theory and real equipment*

The teaching design of aircraft spares sequestration course is the basis of teaching arrangement, organization, implementation, is the premise of the implementation of the integration teaching mode of

theory and real equipment. According to the training goal, the knowledge and skills of supply chain management can be divided into a number of practical subjects, each subject has a specific theory and skill, the teaching process is the integration teaching mode of theory and real equipment at the target and around subjects.

Theory is the knowledge combined with real equipment to learn, the practice was the operation combined with real equipment to conduct, as a result, the integration teaching of theory and real equipment is actually a step-by-step teaching method namely "real equipment serves theory, theory guides practice, practice cultivates ability". In the process of teaching, teachers teach theory combining real equipment, students do operation under the guidance of teachers, students self-operate, crossing to carry out, according to the working process teachers guide, organize students to operate, paying attention to the interaction between "teaching" and "learning" (WANG Q., 2010), and cause students to strengthen the consciousness of cooperation in the operation, to learn how to organize and manage.

The integration teaching of theory and real equipment is based on strengthening the cultivation of the practical ability of students, adopt the subject teaching methods, by undertaking the teaching task of specific subjects to lead and improve the students' learning interest, to stimulate students' achievement motivation, and to improve the students' adaptable ability of post in practice (YU X.H. *et al.*, 2009).

Aircraft spares sequestration course all does teaching in the laboratory, teaching way agile diversity, structure and principle of equipment are taught with animation, video, multimedia courseware demonstration, combined with real equipment teaching, which integrates the teaching of theory knowledge and skills training aiming at real training very well, students not only know how to tubing and wire for equipment's internal oil seal, also by watching the object, model, and graph, text, sound and other multimedia materials, intuitive understanding the structure, working process of equipment, making sure the trend and work of oil. Then, the teacher asked the students how to replace the old oil in the internal oil with new oil, students can analyze the internal oil sequestration method, according to the newly-obtained and intuitive understanding of the equipment structure and working condition. On this basis, it is logical to learn the oil sequestration rules of the equipment.

Teaching mode is "typical subjects: teachers give priority to students as the auxiliary pole", "similar subjects: students give priority to teachers as the auxiliary pole". where:

The teaching mode of typical subjects is "determine subject, autonomous learning, make plan, subject implementation, teachers evaluate"

five-step teaching method (MA W.Q. *et al.*, 2011), the autonomous learning is mainly in the process of the internal oil sequestration should have students self learn the theory knowledge of the equipment structure and work, the rest of the each step dominated by teachers.

The teaching mode of similar subjects is "undertake subject, autonomous learning, customized solutions, self implementation, self assessment" five-step teaching method, which means that students accord to the typical subject taught by teachers to draw inferences about other cases from one instance, all steps are self-led and Independent-completed for student, autonomous. Give students the task of teaching method are effective to improve the students' autonomous learning ability, stimulate the students' learning enthusiasm, change passive "rote" learning as active learning.

3.3 The practice teaching based on the integration teaching mode of theory and real equipment

The operation skills training based on the integration teaching mode of theory and real equipment is very important teaching activities. When do practice teaching, teachers should avoid speaking much and practice less that lead to operation lesson changed into speaking lesson, should adopt the method of intensive lecture and more practice, must have enough patience to demonstrate operation. And need to explain attention matters, and took pains to each student to interpret the problems in the process of operation, strengthening the students' safety awareness and standardize operation consciousness of sequestration equipments. When doing demonstration action, operate standardly, accurately, slowly, in order to let the students see it clearly, demo decomposition action when necessary, if there are many students, by group presentation, in order to be sure to make every student to see it.

Teachers should go, watch, say and demonstrate frequently and frequently when the students practice training, only in this way can students' improper operation, in a timely manner to correct it. For the common problems in training students, should be timely to stop all activities, unified emphasis on these problems, and make correct demonstration.

3.4 The assessment method based on the integration teaching mode of theory and real equipment

Teaching goals include operation skills goal, theory knowledge goal, so the evaluation of students should not only outstanding the assessment of professional operation skills, also attach great importance to the assessment of professional theoretical knowledge. In addition, Aircraft spares sequestration is a job with a certain risk, requiring a certain amount of

cooperation consciousness, therefore, also assess the security consciousness, cooperation consciousness.

(1) Theoretical examination score accounts for 30%. This assessment mainly evaluates the level of mastering the theoretical knowledge and subjects principle analysis ability, etc., which are an important part of the position ability of students .

(2) Practic assessment score accounts 50%. This assessment mainly evaluates the operation skills of different sequestration technology, including the selection and use of tools, selection and application of packaging materials, operating methods and procedures, etc. The correctness and proficiency of the operation skills is gradually increased through constant training. Evaluating the operation serves as well as for the target achieving to master some specific sequestration technology and the sequestration skills training of the specific equipment, also to serve the overall goal to form the position ability and achieve the aircraft spares sequestration skills.

(3) Ordinary assessment score accounts 20%, including safety consciousness (5%), cooperation consciousness (5%), innovation ability (5%), organization and management ability (5%). In terms of safety consciousness, it is necessary to evaluate whether the operation of students" selection and use of tools, equipment and wiring installation is in accordance with the safety operation procedures etc, and also to evaluate whether the safety protection device of equipment and lines installed by students is perfect and can guarantee the safety of the equipment and the operation personnel. Innovation ability and organization and management ability, according to the performance in the usual teaching process, such as whether students positively think, whether the organization in the process of operation training is reasonable, etc. In addition, also to evaluate students whether to comply with classroom discipline, actively participate in skills training, and exchange and cooperate with classmates, etc.

3.5 The teaching effect based on the integration teaching mode of theory and real equipment

Since the integration teaching mode of theory and real equipment implemented in aircraft spares sequestration course, achieved remarkable success. First of all, this kind of teaching mode has changed the students original learning methods, improve the teaching effect of the specialized course, cultivated a batch of the best students with solid theory knowledge and skilled operation ability. Students not only achieved excellent results, also won the consistent high praise of counterparts. At the same time, the integration teaching mode of theory and real equipment increases the requirements for teachers, this causes the teacher endeavor to study business and practice operation skills, which

improves the teachers' business ability and teaching level, makes more teachers became the "civil-military in both" and "double type" teachers.

4 CONCLUSIONS

Through the integration teaching of theory and real equipment, not only teachers' teaching level is improved greatly, also students' learning enthusiasm is stimulated in professional course, meanwhile deep the understanding of professional theory by operating. The integration teaching of theory and real equipment can make every subject simultaneously taught, demonstrated, trained, which enhances the visual and enables students to master the theory well, combining real equipment, and in a timely manner to guide practice with theory, digest theory in practice, diverse teaching methods constantly enhance students familiar with the real equipment, so theory and operations are all easy to accept, so as to improve the students' interest in learning, to mobilize the students' learning initiative and enthusiasm. The teaching mode reform practice of aircraft spares sequestration course proved that the teaching effect of the integration teaching mode of theory and real equipment is remarkable.

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