Study on the Teaching Content of Specialized Skills Courses for Armored Equipment in Emerging Talent Development

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Abstract. To concentrate efforts on exploring future models for cultivating exceptional talent and establishing a distinctive brand, a emerging talent development plan has been implemented. Through specialized talent cultivation programs, courses related to a specific professional skill in armored equipment have been introduced. To enable students to proficiently operate new state-of-the-art equipment and master professional skills to reach the corresponding technical grade levels, this paper studies regulations such as specialized technical instructional guidelines, course syllabi, and talent development programs. Based on these studies, it further analyzes the specific content of courses in specialized skills related to armored equipment for emerging talents. Optimization and supplementary schemes, as well as specific training subjects, are proposed. This research holds significant practical importance in enhancing the quality and efficiency of course teaching, comprehensively cultivating students with robust capabilities, and laying a solid foundation for their long-term development.

Keywords: Emerging talent; armored equipment; professional skill; teaching content.

1 Introduction

To better meet the needs of talent cultivation in transformative construction, and to address issues of talent development quality, an innovative talent cultivation plan has been proposed. This plan focuses on exploring excellent talent training models, aiming to nurture a group of top-tier emerging talents with outstanding abilities, thereby establishing a distinctive brand in talent cultivation and teaching training models. In accordance with the talent development scheme, specialized courses will be introduced within relevant disciplines, allowing students to proficiently operate typical equipment, master the specific professional skill, and flexibly organize the use of equipment. This ensures they achieve professional technical standards and possess robust capabilities[1][2].

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This paper takes the cultivation of a specific professional skill in armored equipment for emerging talents as its research subject. Focused on the characteristics of new equipment, it analyzes teaching outlines and talent cultivation programs to understand the basic requirements of higher-level regulatory documents for specific professional capabilities. This provides the fundamental basis for researching the content of teaching and training. By summarizing and organizing existing curriculum content and training subjects, the study explores necessary changes in the teaching content of specialized courses in armored equipment for emerging talents. It mainly discusses what additional content and specific training subjects should be included. This approach is of great significance for cultivating robust professional capabilities in emerging talents and laying a solid foundation for their long-term development.

2 Analysis of Requirements for Teaching Syllabi and Talent Development Programs

This paper primarily conducts an analysis based on the latest professional teaching syllabus, undergraduate education professional talent training programs, and the comprehensive plan for cultivating emerging talents.

2.1 Basic Requirements of Teaching Syllabus for Related Courses

The professional teaching syllabus clearly delineates the key content points and standards for courses related to a specific professional skill in armored equipment. These include the basic structure and principles of the equipment, operational methods, fundamental theories of application, basic training, applied training, and practical applications. The key content points specified in the teaching syllabus are consistent with the basic content and steps of professional technical training detailed in teaching manuals. The specific content standards of the course also fundamentally correspond to the related topics covered in various stages of theoretical learning, internships, basic training, applied training, and combined professional technical practices presented in the teaching manuals[3].

2.2 Talent Development Program Requirements for the specific Professional Skill in Armored Equipment

2.2.1 Requirements from the Latest Version of the Talent Development Program.

In the objectives of the talent development program, the relevant requirements are as follows:

1)General Objective Requirements.

The general objective stipulates that students should complete their undergraduate education and initial job training, mastering the fundamental theories and basic knowledge necessary for their professional skills. They should be capable of utilizing

the equipment required for their positions, possess robust qualities and professional integrity, and emerge as high-quality, professional squad commanders.

2)Specific Objective Requirements.

In the specific objectives of the initial job training module, the detailed expectations for students include: acquiring basic knowledge of the equipment and essential professional skills; understanding the basic performance of the equipment, mastering the related professional skills, and possessing the corresponding application abilities; grasping the procedures and methods of organizing training, and having the capability to demonstrate and instruct effectively[4].

2.2.2 Requirements of the Emerging Talent Development Program.

In the general objectives of the emerging talent development program, the following specific requirements are set forth:

1)The fifth criterion under specific objectives stresses Platform Control Capability, which encompasses the need to achieve a designated proficiency level with new equipment technology; possess the ability to navigate and operate in diverse environments such as extreme cold conditions and deserts; organize typical equipment maintenance; and conduct basic fault analysis and troubleshooting of typical equipment.

2)The sixth criterion pertains to Command Skills, which includes the ability to organize personnel activities according to plans and handle situations flexibly; report and communicate timely updates, using various means to interact with superiors and neighboring units; and proficiently operate equipment with the capability to organize its flexible application.

1)The seventh criterion focuses on Leadership and Management Skills, requiring a command of relevant regulations; the ability to organize related training and achieve certain standards.

2)In terms of course offerings in the new overall talent development plan, the following requirements for specialized courses of the specific professional skill in armored equipment are proposed:

Emphasis on the development of equipment operational skills during the third academic year, including both specialized courses in armored equipment and other subjects.

In the initial employment course module on equipment usage, there is a focus on integrating the cultivation of equipment proficiency, operational skills training, and application capabilities; enhancing professional skills and advancing the specific professional courses to the 4th, 5th, and 6th semesters respectively; emphasizing the combined practice of professional techniques and comprehensive application training to establish an integrated practical platform-oriented curriculum[5].

2.2.3 The Supportive Role of Courses in Achieving the Objectives of the Talent Development Program.

The specialized course for a specific professional skill in armored equipment, a prerequisite for the first official assignment and part of the teaching syllabus, serves as a critical educational segment for the integrated application of system knowledge. It plays a vital role in solidly building the students' foundational qualities and meeting the demands of their initial job positions. Through the course, students are expected to comprehend systematic theoretical knowledge, acquire the basic professional skills necessary to operate equipment effectively, and develop the required capabilities for comprehensive application and training organization. The implementation of course instruction should closely align with practical realities, significantly aiding in the cultivation of proficient professional skills, commendable work ethics, superior qualities, and resilient spirit. It is evident that the course aligns perfectly with the objectives set forth by the Talent Development Program[6].

3 Analysis of the Course Content for a Specific Professional Skill

Building upon previous analyses of capability development objectives in a specific professional skill for emerging talent within the Talent Development Program, this paper bases its examination on the latest teaching guidelines and course content outlined by the Talent Development Program. The primary focus is to study the specific instructional content and training of the specific professional skill for emerging talent, discussing the areas and specific training sessions that should be expanded upon and optimized. According to the syllabus, the specialized course for the specific professional skill in armored equipment encompasses five content modules: Basic Theoretical Knowledge, Internships, Basic Training, Applied Training, and Practical Application. The content and sessions for Applied Training and Practical Application show little variation; therefore, the analysis will mainly cover the three modules of Basic Theoretical Knowledge, Internships, and Basic Training.

3.1 Theoretical Learning Phase

The instruction manual clearly defines the primary focus of professional theoretical learning as encompassing the fundamentals of equipment performance, structure, working principles, operation, maintenance, and application, along with training methodologies.

3.1.1 Basic Learning Content.

As outlined in the teaching syllabus, the main courses pertinent to this specific professional skill include the Construction and Principles course and another specialized course in Armored Equipment Skills. The course on Construction and Principles primarily addresses the teaching of equipment performance, structure, and working

principles. Conversely, the specialized course in Armored Equipment Skills focuses on the basic theories, operation, training, maintenance, and upkeep of equipment. Detailed teaching content is specified within the instructional plans for each course; the following discussion will concentrate on the content related to the specialized skills course.

According to the latest version of the instructional plans, the basic theoretical content includes an understanding of ballistics and error correction basics; comprehension of related concepts and terminology; theories guiding initial firing data, amendments, and correction principles and methodologies; as well as the rules of application. Through theoretical study, students should be able to analyze and research practice-related typical precision issues theoretically and possess the ability to employ theoretical knowledge to resolve practical problems affecting precision[7].

3.1.2 Supplementary Learning Content.

In light of the requirements of new equipment, the changes to the basic professional theory are minimal, primarily consisting of updates to theories concerning the determination of specifications for new features on a specific tank model, thereby providing theoretical support for practical applications. The existing foundational theories fully meet the needs of new armored equipment.

From a learning requirement perspective, students are expected to master the methods for determining initial firing specifications. The learning process should start with understanding the differences in content, subsequently facilitating a comparative study of various methods for determining initial firing parameters.

In terms of instructional requirements, an “inspiration + example + practice” approach can be utilized. This method will guide students to contemplate the distinctions in methodologies. Through analysis, inductive reasoning, and summarization, students will gradually comprehend the steps and methods involved. This will be supplemented by theoretical calculations and examples to deepen their understanding and mastery of the material, ultimately reinforced through classroom exercises.

3.2 Internship and Training Phase

3.2.1 Content to Be Added or Expanded for Specific Equipment Models.

In alignment with the practical and specialized technical instructional guidelines of a new model of equipment, the training courses during the internship and foundational training phase remain largely unchanged. However, it does involve additional courses or supplemental training content related to new systems and terminals installed on the equipment.

First, the following new courses have been added:

1)Operation of Mission Terminals. The content includes: selection of types; setting of values; viewing different parameters. Assessment criteria are set as follows: correct procedural steps, correct selection of types, accurate value settings, and completeness of content are required for a passing grade.

2)Operation of a Specific Device. The content covers: starting and shutting down the device; operating the device. The assessment criteria are as follows: correct procedural steps and proficient operation are required for a passing grade.

Secondly, for the first internship course, content concerning the understanding and use of two new systems equipped on the new equipment is added. The assessment criteria are defined as: familiarity with the names, functions, and locations of various equipment and devices, mastery of placement and fixation methods, and correct usage are required for a passing grade.

3.2.2 Content to Be Added or Expanded for Specific Equipment Models.

The addition of new courses is as follows:

1)Utilization of a Specific Function. The content comprises practice on the operational interface; calibration; numerical setting. Assessment criteria specify that correct procedural steps, accurate numerical settings, and complete coverage of topics are necessary for qualification.

2)Operation of a Specific Device. The content includes calibration procedures; usage and adjustment; preparation before operation; mode operation. The assessment criteria require correct procedural steps and proficient handling for qualification.

3)Operation of Mission Terminals. The content involves selection of types; setting of values; viewing different parameters. Evaluation criteria are: correct methodological steps, correct selection of types, precise value settings, and no omission of content are criteria for passing.

4)Operation of a Specific Device. The content covers starting and shutting down the device; operating the device. The established assessment criteria are correct procedural steps and proficient action for qualification.

Additionally, for the first internship course, there's an augmentation in content regarding the understanding and usage of two systems of the new equipment. Assessment criteria are familiarity with the names, functions, and locations of various devices, mastering the methods of positioning and securing, and correct usage.

From an instructional standpoint, an organizational method will be adopted where different internship courses are conducted concurrently, involving all students rotating through hands-on training with actual equipment. This approach facilitates a gradual mastery of all operational procedures and methods, deepens the students' comprehension of the relevant devices, and culminates in an assessment conducted during class to ensure every student meets the criteria.

3.2.3 Foundational Training Phase.

In light of the specialized technical instructional guidelines and the characteristics of the new equipment, both types of equipment being fitted with internal calibration devices necessitates the addition of specific training content in the calibration curriculum during the foundational training stage. Primarily, this involves augmenting the internal calibration procedures within the pre-calibration training component. The assessment criteria are set as follows: accuracy in procedural steps, precision in the

adjustment of comprehensive correction values, and adherence to required calibration accuracy standards constitute a pass.

From a pedagogical perspective, an organizational strategy of conducting various training courses simultaneously is advisable. This arrangement would allow all students to rotate through hands-on learning experiences with actual equipment, facilitating a rudimentary understanding of operational steps and procedures. Furthermore, it deepens their comprehension of the relevant devices. Assessments should be organized during the class, with the possibility of randomly selecting one of the two pre-calibration components for testing.

4 Conclusions

Based on an analysis of professional teaching syllabuses, talent development plans, and specialized technical instructional guidelines, this study establishes the pedagogical content for courses relevant to specific model equipment as defined by the latest teaching guidelines and plans. A comparative analysis against the new systems, functions, and features of the new equipment has been conducted. Recommendations for additional theoretical course content and specific practical training courses or training elements have been presented, aiming to effectively support the achievement of educational and developmental objectives. This delineation of new content specifies fundamental requirements from both learning and instructional perspectives. The findings of this paper provide a theoretical foundation for further research into innovative talent training models and assessment strategies for armored equipment specialties in upcoming studies. Enhancing the quality and efficacy of course instruction and fostering a more robust and comprehensive skill set in students hold significant importance for professional proficiency.

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