

Design of the Training – Approach for Identification of the Requirements to the Educational Process in the Military Education System

Daniel Berchev

*Research and Innovation Institute
Vasil Levski National Military University
Veliko Tarnovo, Bulgaria
dberchev@nvu.bg*

Milko Stefanov

*Information and Security Affiliate
Rakovski National Defense College
Sofia, Bulgaria
m.j.stefanov@rndc.bg*

Abstract — This article considers the design phase of the systems approach to training as a logical link between the results of the learning analysis and the development phase. In this sense, the object of research is the systems approach to training, and its subject is the design of training, in the context of the military education system. The purpose of the article is to provide: (1) an understanding of the content and approach for implementing the training design phase as an element of the systems approach to training; (2) analyzing different approaches for implementing the training design phase; and (3) observations on the features of the training design phase. In the conclusion of the article, the authors substantiate their view that training design, as a stage of the implementation of the systems approach, requires the identification of resources, goals, sequence and environment of training to meet the requirements of the military education system.

Keywords — education, military education system, systems approach to training, training design.

I. INTRODUCTION

Military education system, as part of the education system of the Republic of Bulgaria, is called to ensure the preparation of personnel in regulated professions in the field of security, such as: "Officer for tactical level of management", "Officer for operational level of management" and "Defense and Armed Forces Strategic Command Officer". The structuring of the military education system ensures lifelong learning in the context of training officers for the needs of the Bulgarian Army and the Armed Forces (AF) of the country. The functioning of the military education system is closely related to a set of responsible institutions, determined to manage the capabilities and resources, to build the way and contribute

to the achievement of the educational goal of the society and the specific goals of the Bulgarian Army and the AF as a whole.

At the entrance to the military education system are the higher military schools, in particular the Vasil Levski National Military University (NMU "V. Levski"), which predetermines their responsibility in designing the training of future officers. For decades, military education and training in military academies was clearly influenced by the Cold War paradigm. With our country's full membership in NATO and the European Union (EU), the requirements for military education and training have changed, and a frequently asked question has been: What can be learned from other armies about how to better prepare our future officers for the full range of operations?

Approaches to training and organizing the armed forces of other countries that are part of NATO and/or the EU reflect the requirements placed on them by the respective security environment. Every country faces strategic circumstances that require its armed forces to prepare for a combination of internal and external threats. In this context, the role of the institutions (Ministry of Defense, military academies, higher military schools, military colleges, training centers, etc.) is to provide an appropriate problem-solving framework to be used by military personnel (in particular, officer-cadets, trained in higher military schools) and units when asymmetric and conventional threats present challenges that existing methods do not adequately address. This highlights the need to apply new approaches to address the changing requirements for the capabilities of the AF, and for this it is important to ensure an understanding of the processes related to education and training taking place within the military education system,

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which will provide adequate solutions for their improvement.

Taking into account all the peculiarities in the formation of the professional competences of the future officers at the NMU "V. Levski", we decided to approach this problem from the position of the systemic approach. Therefore, in this publication, the object of research is the systems approach to training, and its subject is the design of training, in the context of the military education system. In this sense, the purpose of the article is to provide: (1) an understanding of the content and approach for implementing the training design phase as an element of the systems approach to training; (2) analyzing different approaches for implementing the training design phase; and (3) observations on the features of the training design phase.

II. MATERIALS AND METHODS

A systems analysis was applied when considering the training system as consisting of various elements (goals, content, methods, means, assessment), which are interconnected and influence each other.

A comparative analysis was made of different approaches to training design, presented by different authors and organizations (Hamza, Dhawan, US Army, British JSP 822), as well as of the definitions of "education" and "training" given by different authors and organizations (Armstrong & Taylor, NATO, US Army, British Army, Bulgarian doctrine).

Regulatory and departmental documents, curricula and programs, NATO documents, as well as scientific publications were analyzed.

A descriptive analysis was made of the phases of training design and the features of training in the military education system, which must be taken into account when designing training.

III. RESULTS AND DISCUSSION

1. Education and training in the context of the military education system

There is debate about the relative value of "education" versus "training." Many critics argue that the various military schools should be training officers for their next assignment, rather than training them for greater professional contribution at some unspecified future time and place. Others insist that military education should focus on operational military matters to the exclusion of "soft" subjects such as international relations, economics, governance, etc. [1, p. 21].

The identification of "education" and "training" in the context of the military education system is common, but in their etymological and didactic sense the two concepts differ. This requires that the characteristic features of each of the concepts be deduced. As a starting point for our reasoning, we will indicate a few definitions for the two terms.

When it comes to civilian organizations, the primary purpose of learning and development as an organizational process is to support collective progress by collaboratively, expertly and ethically stimulating and facilitating learning and the acquisition of knowledge that supports business objectives, develops individual potential and respects and builds the diversity. In this regard, Armstrong and Taylor define education and training as components of learning and development. The latter are defined as the process of ensuring that an organization has the knowledgeable, skilled and engaged workforce it needs. The definitions of education and training that the two authors state are as follows:

- Training – the systematic application of formal processes to transfer knowledge and help people acquire the skills they need to perform their jobs satisfactorily.

- Education – the development of knowledge, values and understanding needed in all aspects of life, rather than knowledge and skills related to particular fields of activity [2, p. 284].

Although true, the above definitions can be seen as restrictive in the context of the Bulgarian Army and the Armed Forces of our country. Army training is the act of acquiring, maintaining, or improving knowledge, skills, and attitudes to achieve specified standards. Army training is a combination of training, education and experience. In virtually all military schools, professional development programs include elements of both education and training. Coordination between them implies achieving success across the learning continuum, by forming a synergistic effect, as personnel gain experience and develop individually over time, acquiring and performing progressively higher skills and responsibilities as they advance in their careers [3, pp. 21-22].

In the NATO documents governing the spectrum of education, training, exercise and evaluation (ETEE) activities, education and training are defined as follows:

- Education: Systematic training of individuals that will improve and develop their knowledge, skills and competencies to perform duties and tasks associated with a position/role. It is a developmental activity that enables individuals to take a reasonable response in any situation, including unpredictable ones.

- Training: Individual training is the development, improvement and retention of the skills and knowledge necessary to perform specific duties and tasks. Individual training is a learned response to a predictable situation (skills). Collective training is designed to prepare teams, units, and other elements to perform military tasks in accordance with specified standards. Collective training includes procedural training and practical application of doctrine, plans and procedures to acquire and maintain collective tactical, operational and strategic capabilities [4, p. 2].

As such, the NATO training spectrum is defined as having an individual focus linked to collective knowledge.

The individual focus is described by two elements: education and individual training. The collective side includes collective training and exercises [5, p. 6].

The US Army Strategic Training Framework considers Army training and education as elements of professional development programs and defines them as follows:

- Training is a learning event designed to develop, maintain, or improve the ability of individuals or units to perform specific tasks or skills. Viewed through the lens of "psychomotor, cognitive, and affective (related to moods, feelings, and attitudes) learning," training is largely defined by psychomotor learning and promotes mastery of established performance standards in the operational environment.
- Education imparts both specific and general knowledge and develops habits of mind applicable to a wide range of activities. Viewed through the lens of 'psychomotor, cognitive, affective learning', education is largely defined by cognitive learning and promotes broadening of horizons, use of different perspectives, critical and reflective analysis, abstract reasoning and innovative thinking, especially in relation to complex, ill-structured or non-linear problems.

For the purposes of the British Army, the Training and Education Manual (JSP 822) states that 'training' covers any training, education, learning or development activity, whether individual or collective, which is designed to meet the needs of cadres users [6, p. 4].

The Doctrine for the Training of the Armed Forces of the Republic of Bulgaria (NP-7) considers "training" as "a process of transmission and assimilation of knowledge, skills and habits for the acquisition of education, qualification, competences, appropriate motivation, optimal physical and mental qualities, corresponding of the needs of the armed forces to build the necessary operational capabilities" [7, p. 51].

NMU "V. Levski", as a higher state school, conducts training for cadets to acquire higher education at the educational-qualification degree "Bachelor" in the field of higher education "Security and Defense", professional direction "Military Affairs" in the specialties of the regulated profession "officer for tactical level of management". The state requirements related to this are defined by an ordinance adopted by Decree of the Council of Ministers (DCM) No. 205 of 30.08.2012. It states that higher education in specialties from the regulated profession "officer for tactical level of management" is acquired through training of officer-cadets in full-time/part-time form of education. In addition, the training and outcomes are said to be compliant with level 6, sub-level 6 'b' of the National Qualifications Framework (NQF). It is an integrated qualifications framework and is fully aligned with the Qualifications Framework in the European Higher Education Area and the European

Qualifications Framework for Lifelong Learning. In the NQF, among others, the general descriptors for the educational and qualification degree "Bachelor" are listed, based on the results of the study and the acquired knowledge, skills and competences:

- knowledge – is defined as theoretical and/or factual;
- skills – described as cognitive (involving use of logical, intuitive and creative thinking) and practical (involving dexterity and use of methods, materials, equipment and tools);
- the competences – personal and professional, are described in view of the degree of taking responsibility and independence [8].

The training in specialties of the regulated profession "officer for tactical management level" is carried out according to curricula that are approved by the Minister of Defense in coordination with the Minister of Education and Science. The curriculum includes compulsory, elective and optional subjects. Compulsory study disciplines provide broad-based and specialized training, building professional competences. They are separated thematically into groups with a minimum timetable, as follows: Basic military training (150 academic hours); General military training (200 academic hours); Special military training (700 academic hours); National Security, Resource Management and Fundamentals of Law (150 academic hours); Educational practice and internship (120 academic hours); Language, leadership and physical training (700 academic hours). On the other hand, elective courses provide specific knowledge and competences, and optional courses provide the opportunity to acquire knowledge and skills in various scientific fields [9].

Structured in this way, training should provide:

1. obtaining broad-based and specialized professional training in the professional field "Military Affairs";
2. acquisition of adaptability skills in accordance with the changing conditions of professional realization;
3. acquisition of skills for independent professional work and team work;
4. conditions for educational mobility and international comparability of acquired knowledge and acquired capabilities [9].

From the analysis of the above-mentioned features of education and training in the context of the military education system, we can summarize that:

- these are processes that are well defined, which means that the two concepts (education and training) should not be used interchangeably;
- the training and education of people in defense is an activity of particular importance for building defense capabilities;
- through the training of officer-cadets in the higher military schools, emphasis is placed on the people in the

defense, who are the basis of the operational capabilities of the Armed Forces of our country.

2. What is a systems approach to training and why should it be implemented?

The systems approach to training (SAT) is widely used in the organization and direction of all learning product development activities by both civilian and military educational institutions. Such learning products can be individual courses (short-term and long-term), training modules, training programs in a specific discipline from a curriculum, as well as for the entire training course for obtaining an educational-qualification degree in higher schools.

The SAT is used in the analysis, design, delivery, provision, direction and management of defense training and education [6, p. 8].

To create an effective and efficient training program, NATO policy applicable to member states is to use a SAT to design and develop a training product that is focused on the core tasks, relevant job requirements and objectives of the training necessary to perform a certain activity [10, p. 5]. In this regard, at the core of the training and education process woven into the military education system is the application of a SAT that will ensure that our training and education is relevant, efficient and effective.

All training systems are unique. Accordingly, the SAT process is not designed to be prescriptive or restrictive [11, p. 2]. In the literature, the general view is that the systems approach is a process that encompasses five interdependent phases – analysis, design, development, implementation and evaluation. Each one of them is based on the results of the previous one. However, they are not sequential, and a change in each requires review and may require adjustments to previous phases.

Although evaluation is usually listed as the last step, it is carried out throughout the whole process of the SAT [12, p. 5]. This means that those who develop the training products can move in and out of each phase. The continuous formation of evaluation of the products of the process of the SAT, together with their approval, serve to eliminate or reduce deviations from the goal of training [3, p. 45].

3. Training design as an element of the system approach to training

The "Design" phase is a decision-making phase [12, p. 3]. It can be defined as the logical connecting element between the results obtained from "Analysis" and "Development", which are the main elements of the SAT.

There are different understandings of what "Design" should encompass. One of these views is that of Hamza [13], who states that design is an outline of all the details related to the training process: "what, where, who, when and how", for use by coordinators, curriculum developers and teachers (instructors). According to him, there are five main components of training design:

- Learning outcomes;
- Training Materials;
- Trainers and Content Experts (Subject Matter Experts);
- Training Methods;
- Logistics [13, p. 23].

Dhawan [12] points out that in the design phase, we perform three important activities:

1. We define what the student needs to learn in class and how to translate that learning into practical activity. In this way, we form the learning objectives.

2. We determine what the teaching material and teaching methods should be.

3. We develop a plan (method) for assessing the student's competence to perform the specified activity [12, p. 3].

For the needs of the US Army, TRADOC Regulation 350-70 (2017) states that the design phase identifies all resource requirements, learning environment, learning objectives, test items, learning sequence, and assessment and/or graduation requirements of the trainees. The detailed plan developed must be consistent with the users of the cadres. It defines when, where, and how training outcomes are achieved to meet Army requirements. It also determines the resources needed to develop, distribute, implement, and evaluate learning products [3, p. 49].

In its most detailed form, the design phase is presented in Volume 2: Defense Individual Training V3.0, part of the Training and Education Manual JSP 822 (V7.0 Feb 24). In it, the design of training is defined as the second phase of the application of the SAT. The manual provides guidance on the activities and the results resulting from them. Training design is described as a three-step process that formulates the training objectives based on the results of the Analysis.

During the first stage, the main goals are formed, based on the already established standards and the conditions for their implementation. In addition, the supporting objectives and main details of the training are defined. This activity is the responsibility of the users of the cadres. The final product is a 'qualification characteristic' which describes in detail what the training should achieve.

During the second stage, the evaluation strategy is formed, which gives an answer as to how, when and in what way it should be carried out. The most appropriate and effective combination of training methods, as well as the tools and means used for their implementation, are also determined.

During the third stage of the design, the main and the supporting objectives resulting from them are structured, as well as the main details in the training scope. This enables the training specification to be formed as a result of the output data from the analysis and scope [14, p. 38].

It is important to emphasize that the Guidance (JSP 822 V7.0) defines the design of training as the responsibility of

both the users of the cadres and the organization providing the training.

Guided by the above considerations, we must also emphasize the fact that when it comes to training officer-cadets at the NMU "V. Levski", additional emphasis should be placed on factors such as: training goals – they will be different from those valid for training servicemen from military units, as well as diversity in the homogenous target group – officer-cadets, but training in different specializations.

IV. CONCLUSIONS AND SUMMARY

Effective management of the military education system requires a structured and systematic approach to training, ensuring alignment with institutional goals and operational demands. The SAT provides a framework that enhances efficiency, coherence, and effectiveness in training design. Based on the theoretical and practical analysis of the training design phase, the following key conclusions can be drawn:

1. Alignment with training needs and resources. Training programs must be designed to meet the specific needs of trainees while efficiently utilizing available resources.

2. Coherence between content, structure, and objectives. The structure and content of training should be directly aligned with well-defined learning objectives, ensuring clarity in the expected outcomes.

3. Appropriate training methods and tools. The selection of teaching methods and tools should be tailored to the content and structure of the training, maximizing learning effectiveness.

4. Comprehensive assessment system. The evaluation of training outcomes must provide clear insights into whether trainees have successfully achieved the intended learning objectives.

The main advantages of the design phase, leading to structured learning, can be outlined in the following areas:

- Enables precise identification of training goals (at both individual and collective levels) and the most effective ways to achieve them;

- Ensures the selection of relevant learning materials aligned with training objectives;

- Establishes a direct correlation between evaluation methods and learning outcomes, improving assessment reliability and ensuring that the assessment accurately reflects the competencies acquired by the trainees;

- Adapts training strategies to both instructional styles and learner preferences, maximizing effectiveness.

Regardless of what training products the systems approach is applied to, and in particular the design phase, it allows training professionals to adopt a structured, methodical approach to planning the training activity. In the context of military educational institutions, the

implementation of SAT will contribute to the design of training and the development of high-quality curricula that will increase the effectiveness of training, optimize the use of resources and ultimately provide better prepared officers for the evolving demands of modern military operations.

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