

SODOBNI IZZIVI VOJAŠKEGA IZOBRAŽEVANJA – PRIMER MAKEDONSKE VOJAŠKE AKADEMIJE

CONTEMPORARY CHALLENGES IN MILITARY EDUCATION – MACEDONIAN MILITARY ACADEMY IN THE CONTEXT

Povzetek V članku so vrednotene nedavne reforme sistema makedonskega vojaškega izobraževanja. Tako sodobni izzivi vojaškega izobraževanja kot evroatlantska zaveza so oblikovali proces transformacije sistema vojaškega izobraževanja in usposabljanja v Republiki Makedoniji. Ta dinamika je zahtevala ponovno opredelitev vloge in pristojnosti Vojaške akademije Generala Mihaila Apostolskega v Skopju. Vojaška akademija danes izobražuje, usposablja in ustvarja mlade vojaške in civilne voditelje, ki so se sposobni spopasti s sodobnimi varnostnimi izzivi, ki vplivajo na obrambni sistem in krizno upravljanje ter sektor za zmanjševanje tveganja nesreč, ne le v Makedoniji, temveč tudi v Jugovzhodni Evropi. Razloženo je tudi, kako je načrt izobraževanja Vojaške akademije usklajen z zahtevami evropskega sistema za prenašanje kreditnih točk in z načeli modernega vojskovanja in varnostnimi izzivi. Poleg tega se članek dotakne tudi vprašanja enakosti spolov ter uvajanja informacijske tehnologije v vojaško izobraževanje.

Ključne besede *Izobraževanje, usposabljanje, moderno vojskovanje, izobraževalni programi, vprašanja enakosti spolov, kibernetike grožnje, modeliranje in simulacija.*

Abstract This paper evaluates latest reforms in the Macedonian military education system. Both, contemporary challenges in military education and Euro-Atlantic commitment have shaped transformation of military education and training system in the Republic of Macedonia. Hence, these dynamics urged the redefinition of the role and responsibilities of the Military Academy “General Mihailo Apostolski” – Skopje. As a result, today, the Military Academy educates, trains and produces young military and civilian leaders ready to meet contemporary security challenges that affect the defence system, crisis management and disaster risk reduction sector, not only in Macedonia, but in the region of South East Europe as well. The paper explains how the education curricula at the Military Academy reconcile with the European credit transfer system’s requirements on the one hand, and the principles of modern warfare

and security challenges on the other. In addition, the paper touches on gender issues in military education, and implementation of information technology in military education.

Key words *Education, training, modern warfare, curricula, gender issue, cyber threats, modelling & simulation.*

Introduction Global political dynamics, along with the economic, information technology development and building of the democratic societies dominate education systems in Europe and in the most parts around the Globe. The most important single factor demanding change, however, is the development in technology in general, and especially in information technology. This factor changes the ways the military operate, train and plan for future operations. Today, we need military officers who are critical thinkers, capable of anticipating the change, deal with ambiguity and uncertainty. We need leaders who can promote organizational change in the face of traditional attitudes and adverse economic situation.

Providing security in a rapidly changing and unpredictable world, and maintaining national security still depends to a large extent on the military, their morale, motivation, and specialized skills which are influenced by their academic background, professional education, and special military training. In this approach, the social and economical justification for the subsistence of the own Military Academy comes out of the needs of the Republic of Macedonia to generate its own officer core that will fulfil certain duties within the defence and security system of the state.

Education and training of officers and civilian personnel that carry out certain duties and tasks within the defence system and the Army entails acquisition of theory and practice of complex military and other sciences at different educational levels within the system of military education and training throughout professional career. In line with that, quality of education and preparedness of the personnel within the defence system is in high correlation with the development of theory and practice in the area of military sciences.

Based on the Republic of Macedonia's determination for NATO and EU membership, a need for transformation of officer education and training system, and in line with that, redefinition of the role and responsibilities of the Military Academy have emerged. The transformation of the system is conveyed in accordance with the standards of NATO and EU member countries, and includes establishing a high level of compatibility with their educational systems. Success in conducting defence missions, personnel training, teamwork, high personnel motivation and efficient command and control will be enabled with the construction of this system. In other words, it would provide efficient professional and qualitative personnel working in the Army of the Republic of Macedonia, and other institutions within the defence and security system of the country. The goal is to build educated and skilful officer

core that should successfully accomplish the mission in the country and abroad, respecting the basic standards, values and regulations.

The transformation of the Military Academy was connected with the requirements for the Republic of Macedonia to develop education and training in the crisis management area, which includes disaster relief and integral border control, in accordance with the standards and procedures adopted by the NATO countries and EU members, where crisis management is one of the basic security related tasks. The efficient conflict management and the active participation during the crisis management is an integral part in the NATO approach and represents a significant contribution in the Republic of Macedonia in maintaining peace and reinforcement of stability and security in the region and all around Europe. One of the key achievements through the transformation was that this system became open for students – officer candidates from other countries in the region as well.

1 THE NEED FOR CHANGES IN MILITARY EDUCATION SYSTEM

The most important part of the military education system in every country, and the primary source for recruitment of young officers, are still military academies. These institutions educate, train and thus produce young leaders, capable of commanding and leading the way in ambiguity. Along with this, military officers need to be honourable people who are ready to serve their country. This is for example why “*Science, honour, duty and country*” is the motto of the Macedonian Military Academy.

Modern warfare and technological development dictate that future officers have comprehensive training, less specialized and will have to cycle back through school often during their careers. In this context for example, Friedman argues that: “[...] *in the age of globalization success is guaranteed to the one who can make connections among disciplines [...]*” (Friedman, 2000, p. 18). Hence, future young military leaders will need a broader range of skills in order to be ready to deal with modern challenges. Additionally, military education systems in the region of South East Europe face the requirements for another set of changes that one needs to consider. Unlike the previous system (the former Yugoslav Army for example), Euro-Atlantic, i.e. democratic standards have urged changes that affect military leaders’ future careers. Today for example, retirement from the military is not really a retirement, but merely a change of careers. Therefore, to respond to personnel challenges, to contribute to the recruiting and retention of the best-qualified personnel, professional military education must tailor its education to individual needs (Spacecast, 2020).

Development of information technology perhaps is one of the most important factors that have affected changes in which military organizations function during peace and war (Rokke, 1995). Breakthroughs in sensors, information processing, communications, and visualization will make huge amounts of information available to the individual soldier. Revolutionary changes in technology place

information and knowledge at the core of national influence and military power. Budget cuts and technological developments are pushing for smaller and more flexible forces. The growing complexity of forces and missions requires a new level of weapon systems integration and organizational change. The Information Age not only places requirements, but also provides opportunities to meet them. We conclude that the organization of military education has the chance to lead the changing military in the twenty-first century (Tagarev, 1996).

The influence of technology and the information technology in particular, is overwhelming. It impacts the process of planning and conducting military operations, organization, communication, command and control, intelligence, procurement, education and training. Today, a new kind of warfare emerged - Information Warfare. "There are plans to expand offensive and defensive capabilities in cyberspace and increase budget for cyber operations. Pentagon announced a major expansion of its Cyber Command and the development of new cyber weapons and a revised set of "rules of engagement" for cyber conflicts, which will help field commanders determine how and when to deploy cyber capabilities" (Michaels, 2013).

Cyber espionage and cyber sabotage can not only speed up enemies' development of their own defence technologies but can also impose severe consequences for military forces engaged in combat, as enemies can knock out communications, corrupt data, and cause computer-based weapons to malfunction. A well-executed cyber-attack could shut down or disrupt military command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) systems, and jeopardize the execution of entire military missions. The consequences for the military, and national security, could be devastating (Nakashima, 2013).

So far, another dimension of the use of military force - the ecological impact has been largely unaddressed by the military. However, the ecological dimension of a military operation could affect both the circumstances under which the Army is used and the way it is used (Rokke, 1995). The area of ecology is still to receive attention from our military educators.

Respective doctrinal changes are taking places and new missions appear. Today, the emphasis is shifting towards participation in international missions, coalition warfare, peacekeeping and peacemaking missions, thus requiring from the military student a qualitatively new level of ethnic, religious, cultural, ecological, and human rights awareness. These new missions demand from the officers, often even on a platoon level, deeper knowledge of psychology and social behaviour, languages, history of the conflict, cultural and religious peculiarities of the fighting factions. Communication skills on every level become critical (Gray and Tagarev, 1995). A proper attitude of an educated officer can speed up the solving of the conflict and lower the casualties among the soldiers, as well as among the civilian population.

All of the above dictates that the military education and training should focus on developing capabilities such as: critical thinking; professionalism, ethics, and cooperation; operation research, system analysis; cultural awareness; law and economics competence, as well as development of research experience, and strive for quality. Thus, a primary task of any military education system should be the development of leadership capable of making decisions under pressure and in uncertainties. We believe that underlying these skills is the ability to exercise consequential/critical thinking.

2 MODERN CURRICULA OF MILITARY EDUCATION

Security dynamics in international relations have dramatically changed after the Cold War. Processes of globalization and technological development along with all benefits have brought many challenges too. Employing benefits from globalization and technological development, many non-state actors like never before have gained strategic power and thus, have started to influence international relations including security.

To address existing challenges, leading nations (predominantly Western powers have introduced a range of new missions for military forces. These new missions, from peacekeeping and peace building through humanitarian assistance and disaster relief to the regime change and democratization under the auspices of the war on terror have unequivocally imposed necessity for change in military culture. Concepts such as "network centred warfare", "rapid, decisive operations" or "shock and awe" remain as valuable as ever. However, from military engagement in Afghanistan and Iraq we learned that operational environments have radically changed. As a result, contemporary operations on tactical level hold potential to have strategic impacts.

The military of the twenty-first century, more than ever, will need leaders able to anticipate change, to deal with uncertainty, to present ideas, to communicate vision, and to lead organizational change (Toffler, 1993). In compliance with this, military leaders in order to make sound judgments must have better understanding of economics, technologies, and diverse cultures than their predecessors.

The above mentioned requirements and operational surrounding dictate that military educational system must complement the civilian one. This approach in education widens the perceptions among future young leaders. It also equipped them with the knowledge and skills based on wider range of options and solutions to the problems that they might face.

The growth of expert military knowledge is accomplished, among other, through the development and implementation of formal, written military doctrinal literature in the military education system. Tritten (1994) asserts that doctrine is the body of institutionally approved and widely articulated concepts, practices and procedures which inform and guide the role of professionals and give them senses of common

purpose and common activity. It not only creates a better and clearer understanding but also enhances, or attempts to enhance, their sense of community and their *esprit de corps*. It is the codification of what military personnel should both understand (their beliefs) and do (their practices).

In the Information Age security environment, the first requirement for the curricula is to ensure that military students do not presume to know who their future opponents or coalition partners will be. This appreciation for uncertainty is the beginning of wisdom in the post-Cold War era (Rokke, 1995). In order to make sound judgments, students must have better understanding of economics, technologies, and diverse cultures than their predecessors.

The emphasis of military curricula is shifting from preparing managers to preparing leaders. Managers function in the lower cognitive domain of knowledge, comprehension, and application. Leaders function in the higher cognitive domain of analysis, synthesis, and evaluation. Managers are people who do things right and leaders are people who do the right thing (Capozzoli, 1995). The military student needs an understanding and appreciation of the blurred boundaries among military, diplomatic, economics, media, and psychological tools for influencing an opponent, as well as the specific requirements of interagency and international cooperation. New dimensions of information and knowledge impact all aspects of defence and security (Perlmutter, 1977).

The dilemma in the military education about how to provide balance between the academic and the specialized education, as well as between the humanitarian and the technical education, is not new. This in fact is the dilemma that also occupies military wisdom in the SEE (RACVIAC, 2014). In the Information Age, however, the initial educational phase of preparation of a specialist is quickly rendered obsolete by the rate of progress. It is not only special skills and knowledge we should be seeking but a higher level of abstract thinking which can be acquired from a higher academic education and a system of life-long learning (Gilman and Herold, 1993).

Universities stand poised to serve as incubators of these non-technical cyber leaders, “bringing theory and doctrine, with methodology, tools, and implementation” (Kallberg and Thuraisingham, 2013). They ought to play a key role in educating civilians and members of the military on the unique aspects of cyber security, fusing knowledge, intellectual capacity, practical skills, and optimizing their campus-wide resources to devise comprehensive curricula that synthesize technical, policy, sociological, and legal components in the study of cyber threats. Even professional military institutions studying national security and strategy have only recently begun to integrate cybersecurity education in their curricula, despite more than a decade’s worth of experience suggesting that networks and information technologies are both essential to operations and vulnerable to attack (Spidalieri, 2013).

The proposal to institute a new structure to educate civilians within the system of military education may seem as a contradiction to the principle of civilian control of the military. However, even NATO experts reason that “Democratic control brings a responsibility for the military to educate civilians in the government, parliament and media on military affairs, and it is incumbent on civilian officials to be prepared to learn, so that civilian and military can collaborate effectively” (Donnelly, 1997).

3 NEW MILITARY EDUCATION SYSTEM FOR OFFICERS IN THE REPUBLIC OF MACEDONIA

Basis for new education and training system for officers in the Republic of Macedonia straddle the boundaries of several factors. More or less these factors are: the idea to promote qualitative, competitive spirit and training while developing young officer corps, promotion of new sources and methods for promotion of officers, selection and education of quality and competent candidates for officers. It should also insure that the roles, duties and responsibilities of officers match future force structure by rank and level of responsibility, and insure that education requirements are linked to the needs for new missions and responsibilities of the Army.

Military Academy has become a part of the higher education system in Republic of Macedonia with a status of associate member to the one of the state universities - university “Goce Delcev” in Stip. Military Academy offers studies in three cycles (the first cycle - bachelor degree, the second cycle - master studies and specializations, and the third cycle - PhD). The university diploma of completed undergraduate studies at the Military Academy is verified in the country, which provides cadets and students with relevant positions for further education within the educational system of the Republic of Macedonia and other countries members of the Bologna's process.

Military Academy, as the only military higher education and research Institution in the Republic of Macedonia, has a basic role to conduct research work and to educate, train and qualify personnel for the needs of: Ministry of Defence, Army of Republic of Macedonia, Crisis Management and Protection and Rescue Systems.

The educational process in the Military Academy is accomplished through three cycles of university studies, and it will encompass continuous professional education for the officer core of the Army, mainly for the needs of the Defence System, but also for the Crisis Management, and Protection and Rescue Systems.

The three cycles of university studies are according to the Bologna Convention and European Credit Transfer System (ECTS) - university studies in duration of 4+1+3 years. The University diploma of graduate studies of Military Academy will be verified in the country, which provides cadets and students with relevant positions for further education within the education system of the Republic of Macedonia and other foreign countries members of the Bologna process.

The curriculum for the 1st cycle (undergraduate study in duration of 4 years) is providing theoretical and practical (hand on) education. It focuses on developing fundamental knowledge in the social, natural, technical and military sciences (security and defence systems, security and defence policy, world affairs, civil defence, strategy, operations, tactics, war fighting techniques, military equipment and technology). Along with this the education system in this context contains programme that supports broader general and technical culture for further education, computer literacy for the service, good foreign language training (English + other optional language); high military knowledge and skills; higher level of military expertise at tactical level, physical fitness and mental readiness and professional training for basic leadership responsibilities. The curriculum for undergraduate studies includes academic disciplines, modules of military training, and physical education.

The first two years of education are general, and the last two years are branch specific (infantry, artillery, armour, signals, engineer, air defence, pilots, NBC, and also for specific duties in crisis management, disaster relief, and protection and rescue). This will provide all necessary preparation for the first commanding duty - platoon commander, and other duties. Military Academy will educate highly motivated, physically and military prepared cadets and students that will be challenged with all the dangers of asymmetrical and other threats, as well as organized crime, terrorism, WMD, etc.

One of the key functions of the Military Academy, along with the education, is to carry out scientific and research work and development of special studies according to the guidelines from the Ministry of Defence and General Staff of the Army of the Republic of Macedonia (ARM). Scientific and research work is a task that supports activities in defence sector. Along with these duties, the Military Academy accomplishes other tasks in the area of higher education, which comply with the law for higher education. The Military Academy also has the lead in introducing the modern computer technology in the field of education and training, and enables the use of these technologies to the other subjects in defence sector.

The Military Academy aims to develop and improve the teaching staff as the foundation of the educational process and the bearers of scientific and research work. It also aims to modernise the curriculum according to above mentioned principles, develop military science and technology, and to fulfil the needs of the Army. Another aim is to develop the instructional material base by introducing the computer technology, and new teaching aids and equipment in the teaching process required by up-to-date teaching methods.

4 PERMANENT EDUCATION DURING THE CAREER AS A PRIORITY

In the Information Age, formal schooling provides only the first step in a lifelong process of learning and utilizing technology. Learning is truly becoming a life-long endeavour rather than an activity that ends with formal schooling. Thus, students

must learn 'how to learn', which means being able to collect, organize, analyze, evaluate, and communicate all types of information. Military students must become active problem solvers and collaborative learners. They must also learn to become effective users of information technology (Houston, 1995).

Their education must be continuous, combined with training, coherent with the whole process of professional development and career planning. A long educational process or training apart from a real practice is not the remedy. The Information Age technology provides means for everyone to learn what they need, at a time they find convenient, from the place they are, in the way they prefer. Furthermore, the new technologies will greatly facilitate comparison shopping for education and will contribute to the emergence of a reliable education assessment system (Jacobsen, 1993).

In addition to the primary level of education, Military Academy is responsible for continuous professional military education of officers, which represents the system of gradual increase of knowledge, skills and perspective throughout their career. The goal is to produce a quality officer core for the Army with knowledge, courage, self-esteem, understanding and vision for future military tasks and ability to make right decisions at critical moments. Bearing in mind that Army always has to be prepared to fulfil its duties and responsibilities stated in the Constitution, the officer core has to go through permanent training for functional roles as well as through adaptation to newly developed situations and changes in accordance with high demanding tasks. This type of educational system has to be dynamic, progressive and integrated throughout officers' career.

Within the framework of continuous professional education for the officer core, the Military Academy of the Republic of Macedonia developed a set of courses at intermediate level (for the duties of company commanders and staff duties for battalion level). At this level, the Military Academy offers Company commander course and Battalion staff officer course. The aim of the Company commander course is to produce officers for the appropriate positions, while the second one is aimed to prepare the officers for battalion staff positions. Intermediate level of education is not branch specific and its aim is to provide the officers that are promoted to O-3 (captain rank) with all the leader skills, tactics and techniques necessary for command position on company level, as well as battalion staff positions. Also one should be able to understand all the principles of joint military operations that includes oversight of resources, restrains and use of doctrine at this level of operations. At this level of education, there is a shift from officer skills focused on training and missions on lower tactical level to development of analytical skills pointed to planning and evaluation of more complex military missions.

The next level of continuous professional education for the officer is advanced level. At this level, the Military Academy is organizing university studies for the 2nd and 3rd cycle (master and doctor of science studies) in the field of military science,

defence and security. The aim is to further improve the officer knowledge in military science, and to prepare the officers for command and staff positions at higher levels. Selected officers will be developing values and standards to professionally carry out military and non-military operations during peacetime, conflicts and war. Throughout the studies, officers will develop greater intellectual and analytical knowledge and skills.

At this level, the officer studies procedures, tactics, scenarios and doctrines for joint tactical units at a battalion level and higher, and at the same time they are trained for staff positions at a brigade level and above, and command positions at a battalion level. Further at this level, the officer develops skills to analyze and solve different military problems, to work as a part of a team at the unit staff, which includes a full understanding of complex military operations, organization and procedures for the mission. This form of education is organized within the 2nd cycle of university studies, as a specialization for command and staff duties. Specialization will be organized and for the need of the employees in the system for crisis management and disaster relief.

5 GENDER ISSUES IN MILITARY EDUCATION

Constitutional and legal provisions that seek to ensure the equality of all citizens prohibit discrimination and envisage measures for the attainment of full equality (so-called positive discrimination) guarantee the equal representation of women and men in the security sector, and this is the case with the military education. Constitution of the Republic of Macedonia stipulates that the state guarantees the equality of women and men and develops a policy of equal opportunities, enshrines the principle of equality for all in the Constitution and the law. The Constitution prohibits all forms of direct or indirect discrimination, especially based on race, gender, national affiliation, social origins, birth, religion, political or other opinion, property status, culture, and language. Development and enhancement of gender integration in military education and training was one of the focuses of the reforms in military education system.

The Military Academy has embedded the concept where the issue of “gender” is not strictly focusing on women in the militaries, as many may initially think. When discussing gender and security sector reform, the topic cuts across a myriad of gender topics and includes gender relations among many cultures between men, women, boys and girls. It considers cultural development, individual socialization, education within communities, and development and existence of the acceptable gender roles in various societies, among others (Lorber, 1994).

Topics related to gender equality and gender based violence are only partially integrated in the curricula of Military Academy. Still no in-depth curriculum specifically addresses gender-based and sexual violence. We believe that this should be the future objective that will provide military personnel with an appropriate

understanding of how these issues affect their professional success. Another main shortfalls include weak preventive culture and policies, and inadequate inter-agency cooperation as well as analytical and planning capacity.

There are certain steps and measures taken for integration of the gender perspective into recruitment process in the Military Academy, and military service in general. The most important are the following:

1. *The physical fitness criteria for the selection of female applicants are regulated.* During fitness testing, the same tests are administered; however, standards and scores are adjusted to recognize biological differences between women and men. All remaining selection tests are the same.
2. *Legal equality, which means that male and female personnel have the same rights and duties.* They receive equal pay to their male counterparts. Women can join the military forces both as civilian employees or military personnel, and the majority of posts in Army are open to women. Officers are appointed to a service position according to the necessary qualifications; however, measures may be adapted to promote equality of women and men.
3. *Promote equal opportunities between women and men.* Women enter the Army on a voluntary basis. Women can enter the Military Academy equally after passing competitive examinations such as medical, psychological, physical fitness, grades from high school, as well as a personal interview.
4. *No influence on the career due to pregnancy or childbirth.* This is applicable after military education and training, when they start with the military career. The assignment will remain open and conditional upon successful completion of the other tests. It does not hinder motherhood. Thus, motherhood does not become an obstacle for those women who wants to have military career.
5. *Information campaigns.* This campaigns have the goal to outlining possibilities to develop military careers for women and to combine professional and family life by men and women.

The great progress in institutionalizing women's recruitment into the Military Academy in the Republic of Macedonia was made in 1997, when we started with education of female officers for the needs of the Army. In that year, the education of the officer candidates that have finished higher education (faculty level) for the officers of logistic specialties and other services in the ARM, in a form of course, was open to women. The results were clear: in the 1997–2010 period, out of the 240 candidates who finished this form of course at the Military Academy and were promoted in officers rank, 99 or 41% were women.

The Government of the Republic of Macedonia in 2008 made decision to begin process to restart the work of the Military Academy, and in 2009 new Law for Military Academy was endorsed in the Parliament. According to this Law women were authorized to enrol in the Military Academy as students/cadets. That year, for the first time in the history of military education institutions in the Republic of Macedonia, the Ministry of Defence invited women to apply for admission to the

Military Academy, as regular students/cadets at the 1st cycle of study (undergraduate study in duration of 4 years).

The total quota for admission of students/cadets for Military Academy is set each year 'based on a job needs assessment' prepared by the General Staff of the Army. The number of women's recruitment for all five generations of students/cadets at the Military Academy are given in Table 1. Although such efforts represent some progress, gender equality in the officer core of the Army of the Republic of Macedonia has yet to reach a satisfactory level.

Table 1:
Women's
recruitment
into the Military
Academy as
regular students/
cadets at the
1st cycle of study

Generation (School years)	Total	Male	Female	%
2009-2013	34	27	7	20%
2010-2014	34	24	10	29 %
2011-2015	35	26	9	26%
2012-2016	35	29	6	17%
2013-2017	31	24	7	23%
TOTAL	169	130	39	23%

These figures indicate that not all levels of military education are equally accessible to female and male candidates, despite the principle of equal opportunities in place. In order to remedy the unequal representation of women in the military, the active promotion of women's recruitment should continue. However, this statistical data should not be regarded as a quota for affirmative action, but rather as a target against which the level of recruitment of both male and female candidates, and members of national minorities would be measured.

6 NEW EDUCATIONAL METHODOLOGIES BASED ON INFORMATION TECHNOLOGY

Military training has made a big progress from the time of the first war training techniques that were used in the Prussian armies (Brewster, 2002). That progress is mainly driven by the advantages that are brought by the new computer, sensor and micro-processing technologies. These technologies are used like a particular replacement of the traditional training programs in the Army, mainly for: better readiness of the military, lowering the costs for training, longer use of the real equipment and combat technique, and because they are eco-friendly.

The Information Age technology and its all-encompassing influence not only demand changes, but also provide tools facilitating life-long education. Today's distance learning, multimedia, virtual reality, and telepresence concept allow the development of a new concept of officers education and a relevant restructuring of the military educational system. Technology enables us to facilitate learning in new and innovative ways and to provide access to the wealth of information available.

The dawn of the Information Age brings with it concepts and technologies that provide unparalleled opportunities for the military and security force, to develop and adopt new operational concepts that may radically enhance their competitive edge. According to Herz and Michael, 2002, “the military is undergoing a major cultural shift in its approach to simulation. The use of entertainment technology is not a new phenomenon in the military. What is different today is the emergence of a culture that accepts computer games as powerful tools for learning, socialization, and training”.

Technology cannot substitute for good teachers, but can allow a teacher to facilitate and tailor learning for individual students. The emerging concept requires redefining the way military schools are organized and what occurs within the school, as well as rethinking how teachers teach and students learn. According to Brewster (2002), technology enables restructuring of the military educational system by:

- providing new and more powerful ways for students to receive, understand, and manipulate information;
- enabling students to become active learners;
- escaping the boundaries of a fixed location school to facilitate interaction with people and events in faraway places;
- encouraging international, multi-disciplinary project-oriented education;
- promoting cooperative learning;
- allowing both independent and distance learning opportunities;
- matching teaching methodologies to student's learning styles and preferences;
- developing new ways of assessing student performance.

There is an embedded culture of excellence in modelling, simulation and war gaming within the military that has already begun to benefit from advances in video game technologies and methods. Using video game technologies more widely in learning and training within the military feels like a natural extension of this culture. A wide range of games options is now available, from simple board games, through casual gaming, dozens of genres of console and PC games, to massive multiplayer online environments. Advantages of simulation games lay in the provision of a safe training environment, where users are able to play, test and probe without serious consequences. At the same time, it is important to engage learners by providing a motivating, challenging environment, which becomes meaningful to the player when skills and knowledge acquired within the game are transferrable to real work tasks (Heide, Theo and Alexander, 2012).

Advances in simulation technology have enabled an increasing amount of training and instructions to be conducted on training simulations instead on real systems. Nowadays, practically no military training programs exist without some form of simulation or use of a simulator. The simulation of combat, or a wargame, is used more and more extensively to reduce cost and maintain a trained force. It is an inexpensive alternative to live training exercises (Coppieters, 2002).

Based on previous statements, the Military Academy is stimulating and supporting implementation of new educational methodologies based on information technology in order to improve and increase the quality of the educational processes. This is especially the case in education and training of helicopter pilots, where modern helicopters simulators are used. Also, the Academy uses simulation software based on gaming technology for cadets' tactical training at platoon level. There have been plans to introduce constructive simulations software in the process of education for specialization for command and staff duties, and courses at the intermediate level. In addition, the Military Academy has also developed concepts of distance learning and video-teleconferencing, using multimedia tools, virtual reality and other concepts.

Conclusion Education and training of officers and civilian personnel that carry out certain duties and tasks within the defence system entails acquisition of theory and practice of complex military and other sciences at different educational levels within the system of military education and training throughout professional career. The Military Academy is the most important part of this system.

The paper started with the evaluation of the needs for changes in military education system. On this basis, the content of modern curricula of military education was anticipated. This was next connected with the new military education system for officers in the Republic of Macedonia which will encompass continuous professional education for the officer core of the Army, mainly for the needs of the Defence System, but also for Crisis Management and Protection and Rescue Systems.

Based on positive experiences and analyses, the conclusion is that education of the officers must be continuous, combined with training, coherent with the whole process of professional development and career planning. The goal is to produce a quality officer core for the Army with knowledge, courage, self-esteem, understanding and vision for future military tasks and ability to make right decisions at critical moments.

For many militaries, gender is still a new topic. Educators face on the one hand the challenges of developing new curricula and teaching materials on gender, and on the other, the broader call to integrate gender dimensions across all military education and training. Gender, as a security concern, remains at the forefront of defence institutions and military operations.

New developments in technology enable us to facilitate learning in new and innovative ways and to provide access to the wealth of information available. New educational methodologies based on information technology provide tools for: better readiness of the military, lowering the costs for training, longer use of the real equipment and combat technique, and because they are eco-friendly.

We are aware that the key to achieving necessary standards in education and training is in development of teaching personnel and equipping the Military Academy with teaching aids and facilities similar to military academies in the developed countries. Cooperation with similar institutions in NATO and partner countries has a very important role in further development of the Macedonian Military Academy.

Bibliography

1. Brewster, F.W., 2002. *Using tactical decision exercises to study tactics*, Military review, US Army, www.au.af.mil/au/awc/awcgate/milreview/brewster.pdf, 24th March 2014.
2. Capozzoli, T.K., 1995. *Managers and Leaders: A Matter of Cognitive Difference*. *The Journal of Leadership Studies*, 2.3, pp. 20-29.
3. Coppieters, D., 2002. *Military Operational Requirements for Computer Assisted eXercises (CAX) in NATO*. Paper presented at the RTO SAS Lecture Series on "Simulation of and for Decision Making", held in Hague, The Netherlands, 10-11 December, 2002, and published in RTO-EN-017.
4. Donnelly, C., 1997. *Defence Transformation in the New Democracies: A Framework for Tackling the Problem*. *NATO Review*, vol.45, no.1, pp. 15-19.
5. Friedman L Thomas, 2000, *The Lexus and the Olive Tree: Understanding the Globalization*, New York: Farrar, Stratus and Giroux, pp.18
6. Gilman, E. and Herold, D.E., eds., 1993. *The Role of Military Education in the Restructuring of Armed Forces*. NATO Defense College, Rome.
7. Gray, A., Tagarev, T.D., 1995. *A Transformational Model for Transcultural Leadership*. In: Brown, J. M. and K. Tomervik, eds., *Diversity in Organizational Transformation*, University of Minnesota, pp. 17-44.
8. Heide, L., Theo van R., Alexander, V., 2012. *The Participatory Design of a Simulation Training Game*, *Proceedings of the 2012 Winter Simulation Conference*, 978-1-4673-4781-5/12/\$31.00 ©2012.
9. Houston, N., 1995. *The Role of Technology in Education and Training*. In: *Proceedings of AFCEA-Europe Sofia Seminar*, pp. 89-92.
10. Jacobsen, L., 1993. *Homebrew Virtual Reality*. *Wired*, Premier issue, pp. 84.
11. Kallberg, J., and Thuraisingham, B., 2013. "Cyber Operations: Bridging from Concept to Cyber Superiority". *Joint Force Quarterly* 68, no.1, pp. 53-58.
12. Lorber, J., 1994. *Paradoxes of Gender*. New Haven, CT: Yale University Press.
13. Michaels, J., 2013. "Pentagon Expands Cyber-Attack Capabilities", *USA Today*, <http://www.usatoday.com/story/news/nation>, 21st April 2013.
14. Nakashima, E., 2013. "Confidential report lists U.S. weapons system designs compromised by Chinese cyberspies," *The Washington Post* (27th May 2013).
15. RACVIAC 2014, *Conference dedicated to the South East Europe Military education entitled: "Transition of Military Education Systems in SEE"*, Zagreb, February, available at: <http://webcache.googleusercontent.com/search?q=cache:YbanX9ns8pcJ:beta-dev.morh.hr/en/news/press-releases/9031-new-military-study-programmes-presented-07022014.html&hl=en&strip=1>.

16. Perlmutter, A., 1977. *The Military and Politics in Modern Times*. Yale University Press, New Haven.
17. Rokke, E.J., 1995. *Military Education for the New Age*. *Joint Force Quarterly*, 9 (Autumn 1995), pp. 18-23.
18. *Spacecast 2020: Professional Military Education in 2020*. *Airpower Journal*, 9.2 (Summer 1995), pp. 27-41.
19. Spidalieri, F., 2013. *Joint Professional Military Education Institutions in an Age of Cyber Threat*, Pell Center for International Relations and Public Policy at Salve Regina University, Report can be accessed at: <http://pellcenter.salvereginablogs.com/files/2013/04>, 24th March 2014.
20. Tagarev, T., 1996. *The Bulgarian Military Education at a Crossroads*. Sofia, Institute for Security and International Studies.
21. Toffler, A. and Toffler, H., 1993. *War and Anti-War: Survival at the Dawn of the Twenty-First Century*. Little, Brown, Boston.
22. Tritten, J.J., 1994. *Naval Perspectives for Military Doctrine Development*, Norfolk: Naval Doctrine Command, pp.1- 2.