

# Organizational learning: How learning models can be more effective under the shadow of fiscal crisis

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## Abstract

*The current financial crisis in Greece has affected its society resulting many negative implications at all levels and sectors. It is obvious that the Greek state hasn't been prepared to cope effectively with such a situation. The fact that the crisis still is ongoing has as a result, first and foremost, the creation of an unfavorable external economic environment for all the organizations, threatening directly their viability. This study examined the learning process in the Hellenic Army Land Forces and reached the conclusion that a structural transformation and the adoption and a modern concept are required in order the learning process to be facilitated and become more effective and efficient. However, the particularities that the Armed Forces present as organization, call for special studies for the development and implementation of a military learning model. In particular, further specific researches are required focusing on the Hellenic Armed Forces. The study gave the theoretical background and proposed appropriate methods and tools that can potentially be used, to the Greek reality and idiosyncrasies. It also indicated that there are strong evidences that the Hellenic Land Forcers obtain in a high extent the proper infrastructure that could facilitate the restructure and development of a relevant learning model. Nevertheless, the adoption of special management processes are required enabling Army to correspond to its today's learning needs. The need for such a transformation is amplified by the existence of the negative economic financial environment that Armed Forces are enforced to work in.*

## Introduction

### 1.1. Definition of the problem

The continued economic crisis in Greece has influenced in different ways and various aspects all sectors of Greek society with substantial negative effects at all levels. The crisis situation unavoidably has affected all kinds of organizations and especially the governmental ones, among them Armed Forces, mainly because of severe state's budget cuts. It is worth mentioning that the overall cuts between the fiscal years of 2010 and 2016, for the Ministry of Defense (MoD) were almost 25%. Nevertheless, Armed Forces consisting one of the major factors for state's high strategy, have to remain powerful not only by preserving their current operational status, but also by increasing continuously their effectiveness and capabilities.

Of the main factors for a successful Army mission completion is the training and learning. So the key question focuses on the implementation of effective and efficient training and learning process, which enable Armed Forces to obtain the required capabilities. Army training is a really complex, multi-dimensional and costly issue. It is a continuous process, never ends. It includes various levels and stages, spanning from initial basic military training for those who first time join the army, to gradually increased training for the acquirement of high competence and the process of its sustainment and maintenance. Moreover, the insertion of new technologies, new army tactics, the continuously changed security environment and the need for education on matters out of the military sector, demand for further training and learning as well as a continuous adaptation and change of culture. Another factor that affects training is the differentiation regarding the Army personnel composition. Indicatively, Hellenic Armed forces include non permanent personnel who obliged to serve in army for a certain time period; officers and non commissioned officers (NCOs) with various professional relationships as well as male and female Soldiers. This personnel differentiation is more intensive in the Army Land Forces which is the most populated army branch. These personnel, with regard to training and learning processes are characterized by different cognitive background; training and learning needs and different career pursuits.

Additionally, training in Army most of the times requires significant dedication and spending a lot and various resources, such as bulk consumption of fuels, ammunitions and use of expensive equipment.

Modern practice strongly proposes that organizations must be in a continuous process of changing towards adaptation to their external environment, in order to become more efficient and effective for fulfilling their mission and achieving their goals more successfully. In the case when organizations are challenged to operate within a crisis environment, the need for fast changing and adaptation is getting extremely necessary, aiming first of all to their viability and survivability. To this end, current literature and researches indicate that organizations have to learn continuously. Effective learning can be achieved through the adoption of related learning concepts and organizations' strong decision desire to change their structure and cultures following models that facilitate learning.

As research findings on learning in Army, as learning organization, are very poor this constitutes a challenge for further study on it. The challenge is getting bigger when we try to explore the issue with regard to a nation's Army specifically. Easily we can find out that although there are similarities, there also substantial differences among different nations' Armies. This by itself constitutes a specific research field.

### 1.2 Research questions & objectives

The aim of the research is to examine the learning model of Hellenic Land Forces (referred also as Army from now on) and what could be the methods, assumptions, mechanisms and tools that could be used in order this model to be improved, as well as to reduce cost and work as a force multiplier. The main research questions are:

1. *Does the Army organization present any similarities with other business organizations?*
2. *Does the current learning model facilitate and fulfill its goals?*
3. *What are the modern trends on organizational learning and how these could be applied in the Hellenic Army Forces?*

#### The objectives of the study are:

1. To provide the theoretical background on learning management in organizations and how it can be extended to the Greek Army.
2. To explore the current trends of learning in other foreign armies.
3. To explore the external and internal factors that, influence Army's strategies.
4. To indicate whether there is a need Hellenic Army Land Forces to change their current learning concept in order to cope with the challenges of the unfavorable economic environment.
5. To propose a methodology in order Hellenic Army Land Forces not only to reduce and save resources that reflect to economic limitations but also to achieve results that eventually can upgrade their operational capabilities.

This study to become an initial point for further and more specific researches on the issue of learning model improvement within Hellenic Army Land Forces. Regarding the methodological approach, this study mainly falls into the qualitative research, due to the fact that it attempts to investigate the topic "*from inside out*" (Jonker and Pennink 2010, pg.77). Additionally, qualitative research approaches are more accepted in social sciences and business researches based on the assumption that humans' and organizations' behavior cannot always hold and be isolated as in the positive sciences occurs. This happens because their behavior depends on the audiences changing constantly under different and various environments (Greener 2008). The research area of the research is mainly the management, while the business sector is the defense sector (HOU, 2015). The survey based on literature review and as main tool is used the critical review

For a better approach to the research questions, additional methods and tools were used such as:

Utilization of secondary data

A comparative analysis

A case study analysis for a better comprehension of the particular topic.

Within the above context, also it can be said that the research approach is mainly characterized as deductive in the sense that "*begins by looking at theory, produces hypotheses from that theory, which related to the focus of research and then proceeds to test that theory*" (Greener 2008, pg. 16).

This research is organized in six sections. The first one that is the introduction, the second chapter a literature review is given analyzing the main definitions concerning the topic. The third one analyzes the organizational learning and learning organization concept and the main elements for organizations' transformation namely, leadership and culture. In the same chapter a critique on the aforementioned concept is presented in terms of the Army organization. The fourth presents the contemporary trends of learning in the military context. The fifth chapter presents a case study connected with the theory in order to indicate and give first evidence on the capabilities of Hellenic Army to be transformed into learning organization. The last chapter deals with the conclusions and proposals for further researches.

The conclusions of this research in rough lines are condensed as follows: Learning within organizations is a critical element in order they to increase their competitiveness and be adapted faster in their environment. Especially, during turbulent times learning organizations must be more proactive in order to avoid unexpected situations, economic recessions and crises' periods. Army as a special institution and organization has to adopt similar learning policies in order to be more productive in terms of the available resources during peace time. However, due to Army particularities a concern is raised whether it can be based on corporations' paradigms only. Nevertheless, this concept has recently started developing in the military frame. The research also concludes that in the Hellenic Army there are strong evidences and indications that already obtains adequate infrastructure for moving towards an improved and up to date learning concept. It proposes benchmarking and imitation methodologies at the initial stages taking under consideration the inherited reduced cost and lower risk implementation. However, considering that the issue is probably touched for first time regarding Hellenic Army, further and more specific researches are required.

## **2. Literature review**

### **2.1. The problem's approach**

The research on the literature review tries to create a platform where Army can be based as organization in order to undergo a transformation to operate more effectively and efficiently within an environment that concentrates the characteristics of a crisis. The main problem is that in the related literature there is almost nothing about military organizations that have to operate in peacetime period under similar conditions to those that have been shaped today in Greece. Apparently, there is almost nothing available specifically for the Hellenic Army, not only with regard to the crisis environment, but also as an organization in general. On the other hand, the related literature on the issue is too rich concerning other than military organizations. Due to these facts, the topic was examined through a two folded approach:

How organizations in sectors other than military ones, react under crisis situations focusing on learning process.

Secondly, at what extent Army presents similarities to the above organizations in order to use their experience for adapting/improving its learning model.

The above two approaches, it is believed, when they are linked together might lead to a theoretical platform that can work as a general context for the development and directions for appropriate courses of action, that Hellenic Army Land Forces can be based in order to improve their learning model. Under these views, and having in mind that the topic is being approached for first time, the research does not intent to gauge the current learning capabilities and shortfalls of Hellenic Army but mainly to show whether it has at its disposal the background, infrastructure and culture, fulfilling the appropriate assumptions to improve its learning capabilities. Of course the issue is very broad and must be examined from many different and specific aspects; a fact that triggers for further researches on the field with regard to the Greek reality.

### **2.2. The organization's environment& organization crisis**

The continuous and fast changing today's environment force organizations to examine continuously the environments within they operate. The *external environment* involves all the outside factors that can affect the organization. It can be conceptualized as having two layers. The outer environment includes the economic, legal, political, international, natural and technological factors. The layer that is closer to the organization includes the factors that influence immediately the organization's

performance and routine life. These are: the competitors, the suppliers, the customers and the labor market. With regard to the army environment the external environment in military terminology is known as “*operational environment*” and examines the security aspects and threats to a nation. The *internal environment* concerns all the factors that affect an organization and they are located within its boundaries. It involves the corporation culture, the management functions and the organizational members (Daft, 2009).

Although many scholars have defined the term of organization crisis, there is not a dominated definition concerning the organization crisis (Simola 2005). (Burnet (1998 p.g. 476) defines it as the “*disruption that physically affects a system as a whole and threatens its basic assumptions, its subjective sense of self-existential core*”. Crises can take a variety of forms and can occur either as a result of natural disasters or be provoked by human’s actions (political, economic instability, social strives, huge accidents etc) and they might have direct and severe impact on an organization (Pearson and Clair 1998), (Wang 2008). Under extreme crisis’ conditions the organization’s collapse is seen as likely and as a fact to be expected. A prolonged crisis period is possible to provoke a general “*legitimacy crisis*” as long as the influenced individuals start withdrawing their support and loyalty, stop trusting their leaders and other key decision makers and doubting about the current social structure and institutions. (Shrivastava et al 1998).

Although it is considered unlikely to develop principles that can be implemented to all kinds of crises in order to avoid or manage them, there is a sufficient portion in literature that proposes comprehended analyses that can be applied to most types of the crises. (Burnet 1998) refers to a sequence of events about how a crisis can be evolved. He argues that, a crisis is beginning with an *incident*, going on with an *accident* being followed by a *conflict* situation and eventually it is concluding with *crisis*. According to analyses of related case studies there are common difficulties associated with an organizational crisis and its management. These difficulties mainly are condensed in the side effects of a crisis (individual psychological issues, political, social and economic implications), the insufficient time to learn and plan. The latter can explain satisfactorily the paradox of crises. While there is a full awareness of the negative effects when a crisis is broken out, there are not certain or defined strategies to confront it. This is the reason why many organizations find themselves in weak position when crises occur. (Pearson and Clair 1998), (Simola 2005), (Woeste and Heath 2007), (Wang 2008).

Concerning the above, crises’ analysis can be based on key aspects focusing on: *Causes* including all the failures and the conditions that triggered a crisis and allowed failures to occur. These causes are mainly rooted in behavioral characteristics of individuals or groups, non effective or disorientated leadership and/or employees, cognitive limitations, dysfunctional organizational structures and technologies’ failures etc.

*Consequences* refer to the impacts (immediate and/or long -term) due to the occurred failures. Such consequences can be: Employees’ physiological harm resulting to the demolition of basic assumptions about themselves, a breakdown of the organization as members lose their faith to the organizational culture and leadership, meltdown of social order, and followership, abortion of commonly held values, development of extreme individualism, increase of violence, serious injuries and life loses, devastation of critical technological systems, can be some of the consequences of a crisis (Shrivastava et al 1988).

*Caution* includes all the proactive measures need to be taken in order a potential crisis to be avoided. These can be: measures to the elimination of cognitive gaps, activation of organizational support mechanisms, adoption of forms of virtual role systems and/ development of associated norms, enhancement of structural organizational system’s design or by delivering special crisis preparation, and reliance establishment when new high risk technologies are applied in first place.

*Coping* which refers to those measures and actions that have to be undertaken in order to reduce impacts of crisis that it is under development. Coping actions can focus on behavioral collectiveness, cognition and cultivation of a sense of rectification and reserve, optimization and belief to leadership (Pearson and Clair 1998), (Prugsamatz, 2010).

Another thing that characterizes a crisis situation is that in the most of the times its causes are identified in clear performance gaps (Kim, 1998). There are plenty of case studies provide us with findings where organizations and their members appeared a trend of changing during their lifetime loosing

gradually their capability and capacity to learn; create and assimilate new knowledge. Gradually, flexible roles are transformed into defined tasks, teams become structures and networks change into systems. On the contrary, during a crisis period the organization starts a conversed course from the performance mode to a learning one (Simola 2005), by becoming more flexible, moving away from formal structures and opening communication among organization members. In this context, it can be said that while a crisis is a negative situation and unpopular phenomenon in management, it can offer excellent opportunities for an organization driving to the better by offering powerful triggers for changes and learning. (Kim 1998).

Learning contributes to an effective crisis management through which individuals and organizations shift towards to changes of their behavior and culture (Wang 2008). This happens because, normally, during a crisis new information related with the created situation insert in the organization. For example, constructive and thorough analysis of crisis causes, can add new knowledge in organizations since members are getting more motivated and more open to adopt and proceed with changes in order to reduce the forces that maintain the present behavior of organization (Cumming and Worley's 2005), (Wang 2008). All in all, an organization which adopts a learning culture is equipped with new knowledge and skills, enables it to cope with current or future potential crisis.

### 2.3. Training, knowledge and learning

Training is the process whereby people try to acquire new capabilities and skills. (Michiotis 2005). In the frame of an organization the training efforts aim at increasing employees' contribution to the achievement of its goals and objectives (Dessler 2002). In a broader meaning an individual is undergone training in order to gain specific knowledge and skills as for use in his current and future jobs (Dessler 2002). In the today's environment that is characterized by rapid changes, especially in the area of technology, training plays an important role in organizations' success, requiring from their members to learn continuously new skills. To this end, it is essential a modern organization to provide its members with well planned and effective training. A well designed training process includes the following steps (Noe et al 2010):

Assess needs for training

Ensure readiness for training

Plan training program (including: Objectives of training, selection of experienced trainers and appropriate training methods)

Implementation of training program

Evaluation of the training results, while trainees must be provided with proper feedback.

Knowledge is what we know at a certain time. (King 2001). It can be acquired through (i) *explicit* knowledge, which is the knowledge that is obtained through codified and transmitted language, such as books, technical manuals and specifications etc. (ii) *tacit* knowledge that is the knowledge that is difficult to be codified and communicated and it is acquired mainly through experiences stemming from observation and/or practice. (King 2001), (Kontoghiorghes et al 2005). Tacit knowledge is the core of an organization's knowledge and in fact, it is what is used by its members. This knowledge is transferred from person to person and constitutes the pivot point to individuals' learning strategy (King 2001).

Learning is linked to knowledge as the act for acquiring knowledge (Curado 2006). While knowledge is what we already know at a certain time, learning is the process of accumulating and modifying what we know. Learning must not be confused with training, although the latter is considered the heart of learning. It is a common mistake trainers and supervisors to assume that just only by presenting pieces of information; can be enough in order one to learn. Actually, learning is something much broader. "*Learning is a change in behavior or performance that occurs as the result of experience*", (Daft and Lane 2009, pg. 394). It is the process during which information is received, understood, and internalized through a conscious effort that results to a behavioral change (Dessler, 2002). This process can generate creation of new knowledge and conditions for innovation. (Kim 1998). In the frame of an organization, learning means effective implementation and better strategies, better decision making process, reduced and more efficient allocation of available resources (Prugsamatz 2010). It is located in an entity and dominates its ideas (Nystrom and Starbuck 2015) and this is exactly the reason that justifies of what it has been learned it is difficult to be unlearned (Curado, 2006).

The general model of learning process includes the following steps:

A person experienced an event.

Then he/she proceeds with thinking and reflective observations which

Lead to abstract conceptualization and

Conclusions when active experimentation takes place, while the process cycle can be restarted again (Daft and Lane 2009).

#### 2.4. Leadership and Organization Culture

In order for the topic to be approached in a better way, it is essential to consider the meaning of leadership and organizational culture. Leadership and culture are the most important elements for the organizational transformation and success. Schein (2004) argues that leadership and culture are "*the two sides of the same coin*" (pg. 11). It is difficult for one to be understood without the other since leadership has the responsibility for the appropriate organizational culture development and establishment of a management towards this direction.

Leadership can be defined "*as the ability to influence people towards the attainment of goals*" (Daft and Lane 2009 pg. 410). Torrington et al (2004 pg. 300) adopts the following definition that is believed to fit better in the military case: "*Leadership is the process in which an individual influences other group members towards the attainment of group or organizational goals*" The analysis of leadership definition leads to four different aspects: (i) it is an ability; (ii) it occurs among people and groups; (iii) it involves influence and; (iv) includes common goals. In this sense effective leadership can raise organization's employees' productivity (Mihiotis 2005). The today's discussion about distinguished differences between management and leadership functionalities, leads to see them through different aspects. (Daft and Lane 2009). The management deals with stability, order and problem solution by using the existing tools and procedures. Leadership on the other hand, promotes the vision of the organization, innovation and changes, meaning the questioning of current situation and any outdated, unproductive norm that does not work well have to be replaced in order to meet the new challenges.

Culture is defined "*as a set of key values, beliefs, understandings and norms shared by members of an organization*" (Daft and Lane 2009, pg. 77). Schein putting culture into the organization context considering it as a process that socializes and integrates organizational members and allows organizations to adapt to their external environment. He defines it "*as a pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel as related to those problems*" (Schein 2004 pg. 17). Organization culture can be described by three distinguished dimension layers. The first one reflects the visible *artifacts*, the most observable rituals, procedures and processes, symbols and behavioral norms, the *intermediate* one regards the less obvious elements such as values, norms and beliefs. However, individuals keep them at a conscious level and they are able to explain and interpret them. Finally the *last layer* refers to the most hidden, deep and underlined assumptions that people are no longer aware that they obtain them. These assumptions are those that subconsciously guide behaviors and decisions (Johnston et al 2003), (Daft and Lane 2009). The above can be an approach fitting well enough in order for one to understand and analyze the issue of culture in Army (Gerras et al 2008).

#### 2.5. Army as Organization

The question that has arisen is whether Army institution can concentrate similar characteristics of a business organization using business-like tools, in order to be treated, developed and evolved in a way enabling it to increase its own capabilities. If the answer is affirmative then, (i) at what extent Army can apply structural, innovative and adaptable practices towards changes? and (ii) how army culture, leadership, rigid army hierarchy and bureaucratic system can be compromised towards a more flexible organization?

Although there is an extensive literature regarding the development of organizations little space has been dedicated specifically to the application of the organizations' theory, ideas and practices within military institutions (Stothard et al 2013), (Dahanayake & Gamlath 2013). On the contrary, businesses have borrowed a lot of army concepts having found effective implementation in the corporation sector (Keller, 2009). The absence of related researches by the organizational scientists, probably originates from reasons

such as the unfamiliarity with the sector, the quite difficult access to acquire related data (Dahanayake & Gamlath 2013) and the general idea that army is a hierarchal and bureaucratic organization characterized by a rigid and inflexible structure as well as the shared image that army is simple a “*routine-ridden machine*” (Visser, 2008pg 127). Additionally, it seems difficult for the most of the people to understand what the exact requirements are, in order an army organization to develop similar to business learning concepts and what exactly the sector of competitiveness is referred to. Kim Cameron and Robert Quinn (Gerras et al 2008) in their model called as “*Competing Values Framework*” that concerns the character of organizations according to the flexibility's differentiation, classifies Army (as it was expected) to organizations with strong hierarchical structures. Traditionally, these kinds of organizations approach a more bureaucratic culture from a strict to a rigid chain of command and control. However, the model explains in a satisfactory way the existing military paradoxes for strict and close command and control and on the other hand the need for decentralized operations in a crisis or war environment that changes very quickly and where initiative spirit, adaptability and innovation are necessary and essential elements (Gerras et al 2008).

Difficulties are also presented in modeling army organization mainly for three factors: (i) The *heterogeneity* among military unit cultures, (ii) the *limited access* to performance data and (iii) and *difficulties in modeling* the production process and define the kind of the produced outcome. (Hanson, 2012)

Taking under consideration the above mentioned, it can be safely stated that substantial differences and similarities exist between Army and corporation sector. First of all, the pursuits and objectives and how these entities realize the meaning of effectiveness differs regarding the approach and results. From business aspect effectiveness most of the times reflects the capabilities to be more efficient by creating higher profits, company's expansion, be more competitive in its market sector and to satisfy customers. (Meroise and Lee 2010). Army's objectives are related mainly with nation's security aspects. (Bucur et al, 2009). This security environment is characterized by threats that are ranged from minor and of low level threats with low military and technological advantages to asymmetric threats with unknown enemies' capabilities as well as modernized tactical armies with high technology weaponry, able to conduct conventional or unconventional combats. (Hellenic Army Doctrine on Policy and Organization 2015). When we are talking about military victory, mostly we are talking about war fighting and loss of lives. In the business area, we are talking for victories on adversaries in the competitive sector, even if it contains the loss of fortunes and the jeopardy of stakeholders (Keller, 2009). In this respect, it is very difficult to define what effectiveness and efficiency are for Army. For this reason there is not a globally accepted definition that can describe precisely the Army's output and outcome. (Hanson 2016). The UK MoD has established a system to count the army readiness as the produced military outcome. (Hartley 2012) Anagboso and Spence (2009) suggest that the better approach to count military output is by measuring the sum of armed forces 'capabilities.

Regarding strategic planning, Keller (2009) mentions that strategic is a process for diagnosing the external and internal environment of an organization in order to develop and implement its vision, mission, objectives, allocate resources and achieve goals. This approach can be said that corresponds well enough to both business and military strategic thinking not identically but very closely.

Finally, what is a remarkable difference that must be put under consideration is the matter of culture. The nature of the military environment makes the cultural changes within Army structures, a rather more complicated issue, than that of the business. Due to this fact, it is preferable to distinguish it by using the term of “*military or army culture*” (Johnston et al 2003), (Gerras et al 2008). Two questions must be considered: (i) Why it is necessary military culture to undergone a change and (ii) what and how the proper mechanisms need to be implemented in order to facilitate such a cultural change. Regarding the first question it is only enough to view in the contemporary external operational environment and the challenges an Army has to face. Concerning the second question, the difficulty of culture change originates from the “*unwillingness of individuals to precede with any culture changes, just because they justify past assumptions as a source of their pride and self-esteem.*” (Gerras et al 2008)”. Intuitively, it can be said that this challenge is rather even harder in a military organizations.

### 3. Organizational learning and learning organization concept

#### 3.1. Organization Learning Concept

##### *Context of organizational learning concept*

Many organizational leaders and researchers have viewed learning as a key element for organizations' development, by increasing and maintaining their competitive advantages (Kontoghiorghes et al 2005), (Curado 2006). The concept of organizational learning became popular since it had been considered as a principal means for organizations' viability and survivability enabling them to become more effective and efficient in achieving their goals (Wang 2008). The term probably first mentioned by Garret in 1987 (Oternbland 2007) and widely popularized by Peter Senge's book "The Fifth Discipline" in 1990 (Dahanayake and Gamlath 2013).

In spite of the fact, that several different definitions have been given regarding organizational learning, it can be said that still there is not a universal agreement on the issue. Most of the researchers have conceived the organizational learning idea as the product of an organization members' interaction who share their experiences and knowledge. Miller (1996) defines organizational learning "*as the knowledge acquisition made by actors (individual and groups) when these can and are available to apply it, in the decision making process, or use it to influence others within the organization*". (Curado 2006 pg. 28)

Organizational learning can be regarded as a natural process that takes place in every organization. Remarkable, is the case that when they act into turbulent environments, then they are enforced to learn. (Fai Pun and Nathai Balkissoon, 2011). The essence of the organizational learning process is comprised by a set of activities, focusing first and foremost on individuals' learning (Kontoghiorghes et al 2005). However, while the individual learning is a necessary factor for organizations learning, it is not enough for an organization to be considered that also implements the concept process. In other words, the meaning of shared knowledge among an organization's members is not just the simple sum of individuals learning skills and capacities (Kim 1998), (King 2001), (Marsick and Watkins 2003), (Curado 2006). Organizational learning must be conceived as a social process (Mokhtar et al, 2013) which facilitates communication, coordination, and promotes the learning among individuals. To this end, when individuals increase their capacity to learn, the organization's performance is also enhanced as long as the organization is receptive to individuals' efforts to use their knowledge and skills. For that reason, an organization has to develop appropriate mechanisms and proper knowledge management enabling it to encourage, support and reward its members, to use what they have learned (Marsick and Watkins 2003).

##### *Organizational Learning development*

Several models have been developed regarding learning in organizations. Argyris and Schon (1978) argue that an organization teaches through three different loops or levels as follows (Torrington et al, 2004b):

Level 1 or *single loop learning*: It focuses on how we can do things better. In other words, how to improve current processes in order the organization be more effective in achieving the determined goals. To this end, we inspect the results of our actions and activities and then we make corrections, through existing rules and norms.

Level 2 or *double loop learning*: It focuses on the why we are doing these things and not the others and eventually whether there is a need to do different things. At this level, knowledge is developed and the process can lead to changes or to adoption of new strategies and different goals'. In fact, the process explores the insights of the organization.

Level 3 or *triple loop learning*: It focuses on the purpose, principles and values of the organization, by exploring whether they are the appropriate ones.

According to Garvin (1993) the learning process within an organization can be developed through three different consecutive levels:

The *cognitive* level, where individuals are exposed to new ideas. This has as a consequence to expand their knowledge and start thinking in a different way.

The *behavioral* level, where organization members internalize the new aspects and perspectives. This internalization has as a consequence a change in their behavior.

The third level reflects the *performance improvement*. This level leads to measurable results (e.g. superior quality or quantity outcome) due to the fact of change in behavior that took place in the previous step.

Apparently, the conception aims at three different learning targets within the organization: The organization's individuals, the teams and the organization as a whole. This interaction also indicates the dynamic nature of the organizational learning concept. (Saint - Onge and Armstrong 2004).

Pawlowsky has presented a simple and comprehensive model regarding the organizational learning process (Curado 2006). His model includes four distinctive steps; continuously repeated but not having necessarily a sequential order:

The first step is the *identification* of possibly related information with a new piece of knowledge.

The second step includes the *exchange and diffusion* of knowledge among and/or from and vice versa, individuals' /collective (team, group) levels.

The third step refers to the *integration* of knowledge into the already existing organization knowledge systems, either at individuals/collective or both levels. Through those systems the acquired knowledge is transformed into organization's procedural rules.

The fourth step includes the *transformation* of knowledge into action. The reapplication of knowledge into organizational routines ends up eventually to the shape of organizational behavior.

Another interesting model has been presented by March (1991). The model is based on the adoption and development of two managerial strategies: The *exploration* and *exploitation*. These strategies are corresponding and combined with the organizational learning flows of: *feed-forward* and *feed-back* (Crossan and Hulland 2002), (Curado 2006). More specifically:

*Exploration* strategy refers to the development of learning routines in order to facilitate the development of new processes. Its successful application calls for research, risk taking, experimentation and innovation.

*Exploitation* strategy refers to the learning routines by refining pre-existed processes and knowledge. Choice, production, efficient, selection, implementation, and execution are of its main complements for its success.

*Feed-forward* flow refers to knowledge which is transferred from individuals to the organization. In fact it represents the individuals' effort to develop new applications, methods and processes. It involves the elements of experimentation and innovation. It is corresponded with the strategy of exploration

*Feed-back* knowledge flow, refers to the process of refining and reusing of the already existed knowledge within the organization. This flow moves from organizations to individuals' level aiming at a wide-spread of the best practices. It is corresponded with the strategy of exploitation.

### 3.2. Theoretical background on Learning Organization concept

#### *Context of Learning Organization concept*

Learning organization can be defined as an organization that is able to develop strategies for encouraging learning and through these strategies to facilitate organization's members' behavior to this direction. (Kim 1998), (Gonzalez, 2010). To this end, a learning organization is able to expand its members' skills and abilities and motivate them towards a desire to create and develop through a collaborative spirit and on the how people learn together (Dahanayake & Gamlath 2013). A learning organization is characterized by a continuous transformative effort to adapt itself to its external environment. It evolves abilities to create, acquire and share knowledge and at the same time to modify its behavior reflecting the acquired knowledge (Kontoghiorghes et al 2005), (Dahanayake & Gamlath 2013).

However, the above definition can be considered as insufficient for not providing the obtained gains from organization's "expanding knowledge capacity". Thus the definition must be completed by the idea that it (the organization) focuses on development by using its information and knowledge capabilities in order to increase its value improving the bottom-line and organizational results. In a nutshell, the above can be condensed in the phrase: "*Better Knowledge for better behavior for better performance*" (King 2001 pg.3).

While all organizations are considered as learning systems and learning within an organization is a natural phenomenon, a learning organization needs effort to be developed and built. While in organizational learning concept, knowledge resides in the individuals' heads; in the learning organization, special memory systems are needed to be developed to reposit and store the acquired

knowledge, which finally belongs to the organization. (Torrington et al, 2004b). To make it clear, it must be stressed out that while organization learning is a process, the learning organization is the organizational structure, through which knowledge is based, improved, created, distributed, communicated among organization's members and groups and eventually is integrated through organization's strategy and management into routine and practices (Kim 1998).

#### *Building a Learning Organization*

*Leadership* and *culture* are the catalytic elements in order an organization to be in position to be transformed into a learning organization (Dahanayake & Gamlath 2013). To this end, its willingness for changing must be clearly integrated in its vision, mission statements and the adopted management strategies.

Additionally, various tools must be in place, to associate with transformation process and the diagnosis whether an organization is or is becoming a learning organization (Kontoghiorghes et al 2005). Kontoghiorghes et al (2005) in their article argue that a learning organization must have at its disposal or to develop the following instruments and procedures:

Open communications channels

Willingness for risk taking

Mechanisms to support and the recognition for learning

Availability of resources to perform the job

Existence of teams supporting collaborative work

Existence of rewards for learning

Development of appropriate training and learning environment.

The same authors add that that learning organizations must be characterized by: (i) *Change adaptation* that refers to the extent an organization is able to be adapted to its environment changes, (ii) *innovation* that reflects the organizations' capability and flexibility to insert new procedures, and develop new products and services (iii) *bottom line performance* which is associated with the accountability and measurability of the outcome of performance.

Kim (1998) adds also additional characteristics, necessary in the effort of building a learning organization. These are : (i) the ability to *imitate* other successful learning organizations (at least at the initial stages) and (ii) the ability to *absorb* knowledge.

Indeed, imitators argue that by adopting imitation strategies they avoid to sustain the high risks that most of the times innovators have to undertake in "*their research in unknown territories*" (Valnadi and Arbore 2010, pg 202). In such a way, imitators can reduce costs by learning from others' mistakes, decreasing financial efforts regarding initial research and development, needed systems engineering cost, education expenses and by taking advantage by the accumulated innovators' experience (Valnadi and Arbore 2010). However, it must be considered that what makes a business successful is its uniqueness. So imitation under the aspect of cost saving cannot regarded as a complete strategy for a business growth. So it must adopted in cases when there is a need to catch up successful business models and then to surpass the original one passing to innovation strategies (Frery 2006).

As far as the absorptive capacity is concerned it can be defined as the organization's capability to assimilate knowledge when applying imitation strategies (while the capacity to solve problems through the creation of new knowledge reflects to innovation strategies) (Kim, 1998). This capacity pre-assumes the existence of two elements: Appropriate "Knowledge base" that is the already accumulated prior knowledge and "Intensity of effort" that is the amount the individuals in an organization put in order new inserted knowledge to be embodied and internalized within this organization. Organizations that are characterized by high knowledge level but of low intensity of effort are condemned to lose absorptive capacity since prior knowledge is gradually getting obsolete, creating knowledge gaps. On the contrary, organizations with low level knowledge base but putting higher intensity of effort will be able to acquire progressively higher absorptive capacity. (Kim 1998) .

Garvin (2003) in his article supports that building a learning organization is not that a simple case and cannot be established in one night. He argues that to build a successful organization the following factors must be considered: (i) the *available time*, in order management procedures and attitudes to be cultivated properly (ii) the *encouragement of ideas exchange*, raising the boundaries that inhibit the free flow

of information. Moreover, an organization which desires to adopt learning organization's practices must be skilled in five key actions, accompanied with special mind-sets, tools and behaviors (King 2002), (Curado 2006), (Nystrom and Starbuck 2015). These are:

*Systematic problem solving*, aiming at the improvement of existing quality methods in order to overcome difficulties by finding new solutions based on: (i) *Problems' diagnosis*, that must be relied on scientific methods and not at guesswork. (ii) *Decision making*, based on data and not in assumptions and (iii) *Use of statistical tools* (histograms, charts etc).

*Experimentation* based on the systematic research and validated testing through scientific approaches and methodologies.

*Learning from past own experiences*, by systematically recording and reviewing lessons learned from past failures and successes.

*Learning from others*, using knowledge originated from the external working environment. A good approach for this can be the *benchmarking* methodology considering a broader meaning of the term. Another interesting approach that can contribute to the issue is the "criticism" coming from the external environment (e.g. customers) which must be received as opportunity for "learning from mistakes".

*Transferring and sharing knowledge* that has significant impact on organization's effectiveness. The knowledge spread can take place through various methods, such as written reports in hard copy or electronic forms; lesson learned data bases, site visits, personnel job rotation and enlargement, education and training programs as well as active experience.

King (2001) suggests a sequence of strategies and required actions need to be assumed. Although, these strategies can be considered as significantly different, in fact they are linked and mutually supported by each other. These are:

The *information infrastructure strategy* refers to the efforts the organization puts to collect, process, quickly transform and share data of useful and valuable information by establishing and using proper information systems and applications.

The *intellectual property management* regards to the organization's efforts to increase and leverage the value of the existing intellectual assets and property such as brands, trademarks, formulas and other capital assets in order to increase the returns and revenues on them, through their improvement and exploitation.

The *individual learning strategy* focuses on the training and learning of individuals. Actually, it aims at the enhancement of the organization's human capital to the benefit of the organization, through corporations with universities or other educational institutions, on job training method, mentoring programs etc.

The *organizational learning strategy* concerns the process where knowledge is transformed into shared knowledge through organization's systems. This knowledge eventually is embodied into the organization in forms of normative standards (e.g. Standard Operations Procedures).

The *knowledge Management strategy* focuses on the acquisition, explication and communication of knowledge (tacit or explicit) through various management programs, activities, systems and tools that can leverage the value of knowledge. (e.g. data bases which can provide answers to most asked questions, best practices, problem categorization, systems that facilitate the on line communication with expertise).

The *innovation strategy* is the process that purposes at the development and implementation of new products, techniques and processes adding comparative and competitive advantages in the organization. (Thomson et al 2009).

### 3.3. Evaluation of Learning Organizations' effectiveness

#### *Evaluation of Organizational Learning*

"If you can't measure it you can't manage it". This is a maxim managers have well to know that is as true of learning as it is of any other corporative objective. (Garvin 1993). The effective measurement of organizational learning process and the successful learning organization implementation can only become through the measurement of the outcome and the produced results. However, despite, the extensive literature regarding organizational learning and learning organization little can be found regarding the measuring. As mentioned above the organizational learning can be defined mainly through three overlapping stages: (i) the *cognitive* (ii) the *behavioral* and (iii) the *performance improvement* stage. (Garvin, 1993). The latter, in essence, is the stage that tangible, measurable and quantified outcomes can be observed, such as higher productivity, better quality and lower production cost, higher profits etc.

Nevertheless, since all the learning stages are linked together (in the sense that cognitive and behavioral stages can define the success of performance stage) the evaluation of learning process must include all those stages. Regarding cognitive stage the evaluation must focus on the attitudes and depth of understanding. As far as the behavioral stage is concerned, the evaluation must be concentrated on the “proof in the doing” assessing employees’ behavioral in action (on job). Finally concerning the third stage learning curves and manufacturing progress functions indices can be used as measuring tools, ensuring that the preceded steps (cognitive and behavioral changes) have actually produced results.

#### *Evaluation of Learning Organizations*

While the learning organization can be evaluated, the problem which remains is whether an organization is on the right track being transformed into learning organization. Several tools are provided that can be used for measuring the learning organization effectiveness and assist in evaluation. (Stothard 2014). In the current paragraph a brief mention is given on each of the available instruments. Among them, the case of *Dimensions of Learning Organization Questionnaire (DLOQ)* tool presents a specific interest for reasons as analyzed below. Those tools are:

The *Organizational Learning Survey (OLS)*: It has been developed by Goh & Richards and examines the dimensions of (i) Clarity of mission, (ii) Teamwork, (iii) Experimentation, (iv) Leadership and (v) Transfer of knowledge.

The *Learning Environment Questionnaire (LEQ)*: It has been developed by Armstrong & Foley and examines the dimensions of (i) Mission linked learning, (ii) Facilitative learning environment, (iii) Mission support, (iv) Learning identification satisfaction (v) Organization support, (vi) Low personal impact, and (vii) mentoring and coaching.

The *Learning Organization Survey (LOS)*: It supports evaluation on the dimensions of (i) Supportive learning environment, (ii) Concrete learning processes and practice, and (iii) Leadership that reinforces learning.

The *Dimensions of Learning Organization Questionnaire (DLOQ)*. It developed by Marsick and Watknis (2003) and includes nine dimensions. It is considered that this is the more detailed encompassing all the above and it is the only one found that can be used for army purposes as well. For this reason is worth mentioning a little more about.

#### **3.3.1 The Dimensions of Learning Organization Questionnaire (DLOQ)**

The instrument was developed based on research and practice. The developers argue that it can be considered as a reliable one, stating that it has been tested in more than 200 companies and “*they have seen a correlation between the learning organization dimensions and knowledge and financial performance*” (Marsick and Watknis 2003, pg. 136). The DLOQ is consisted by 55 questions divided into nine segments, with regard to the various levels of learning (individual, Team or group, Organization levels). These dimensions are:

*Creation of Continuous learning opportunities* as an integral part and design in a manner that people can have opportunities to learn on job through an ongoing growth and education.

*Promotion of inquiry and dialogue* by encouraging people to express their views; be taught listening to other’s views and be able to provide honest feedback. A culture of inquiry feedback, innovation and experimentation is developed and established.

*Encouragement of collaboration and team learning* by learning people to work and learn together in groups and teams giving them access to different modes of thinking. Team spirit and collaboration is rewarded.

*Creation of systems able to capture and share learning* by developing mechanisms and means (of low or high technology) in order individuals to be able to have access and share knowledge.

*Empowerment of people towards a collective vision* by enabling organization members to set and join themselves in a common vision. To this end they learn to share responsibility and participate in the decision making process and know what they are held accountable to do.

*Connection of the organization to its environment* by giving people the opportunity to see the results of their work and the effects of their participation in the organization development. They are able to recognize external environment forces and adjust their work practices, keeping close connection with the surrounding community.

*Provision of strategic leadership for learning* by posing learning among the priorities of leaders in order to facilitate and support the learning process using it strategically to achieve business results.

#### Key Results

*Financial performance* by stating the financial health of the organization and the use of available resources for growth.

*Knowledge performance* by the improvement of products and services due to the learning and obtained knowledge.

### **3.4. Evaluation of organizational culture**

Considering the importance of leadership and culture and how they are catalytically connected with learning process, an evaluation concept must be considered as well. While the role of leadership more or less is apparent in Army there is an ambiguity concerning the dimension of culture and how it can change in the military context...? Colonel Bod Stewart who was the first British battalion in Bosnia in his interview "Leadership under pressure" he points out that there are two options regarding the contribution of military leaders to the change of culture: "by adapting themselves to the culture, or indeed change it...In fact that is probably one of the primary functions of a leader, to check that the culture is operating effectively" (pg. 37).

Having said this, the existence of a methodology that would enable researchers to make safe assessments regarding the culture status of an organization could certainly assist to the organization transformation efforts. Most of researchers argue that culture evaluation should include qualitative as well as quantitative methodologies. While there is an extensive literature regarding the organization culture, approaching both mentioned researching methodologies, little can be found as far as the military culture is concerned and even less regarding how it can change. However, the issue can be approached well enough; through other associated research models and methods with regard to corporation sector (Gerras et al 2008) as follows:

Cameron and Quinn have offered (worldpress.com website, 2010) a quantitative method of assessing an organization's culture, known as "*Organizational Culture Assessment Instrument*" (OCAI). The tool uses a validated questionnaire, in order to make a diagnosis on current and preferable organizational culture (Bremer 2010)

The *Global Leadership and Organizational Behavior Effectiveness Research Program*" (GLOBE) as it was improved during the 90s by Robert House (House and al, 2004) is another tool that can be used for this purpose. The methodology results to the identification and quantification of nine major segments (*Performance Orientation, Assertiveness, Future Orientation, Humane Orientation, Institutional Collectivism, in-group Collectivism, Gender Egalitarianism, Power Distance, Uncertainty Avoidance*).

Schein (2004) provides a model for a systematic transmission of culture that fits in the army case. The model practically is based on the GLOBE model and its value is exactly that quantifies the military culture. It uses two kinds of mechanisms that Schein calls, *embedding mechanisms* that refers to the actions that should be taken for inserting a culture change within an organization and *reinforcement mechanisms* that have to do with stabilization and maintenance of the inserted changes. (Gerras 2002) and (Gerras et al 2008).

### **3.5. Benchmarking**

The literal definition of the term "benchmark" is "*a level of quality that can be used as a standard when comparing other things*" or "*to measure the quality of something by comparing it with something else of an accepted standard*" (Cambridge dictionary). In the business and organizations' area as benchmarking can be defined as "*the process of improving performance by continuously identifying understanding and adapting outstanding practices and processes found inside and outside of an organization*" (Kelessidis 2000, pg. 2). Another similar definition given by Gregory J. Balm of IMB is: "*Benchmarking is the ongoing activity of comparing one's own process, product, or service against the best known similar activity, so that challenging but attainable goals can be set and a realistic course of action implemented to efficiently become and remain best of the best in a reasonable time*" (Institute of Management Accountants 1995, pg. 2).

Benchmarking can take place not necessarily only within the same industry or business sector, since many processes may be essentially the same from sector to sector. In that sense benchmarking is

rather focuses on the exploitation of “best practices” of a benchmark organization than measuring its performance. The core of the process entails, in fact, the systematic gathering of information from one organization and to be applied properly in the recipient one in order to gain benefits. Those benefits can be: the focusing on areas for performance improvements and the identification of weaknesses, definition of the real position of the organization among others, establishment of criteria and measurement of current performance, “not to reinvent the wheel” when someone else have already done it and you can adopted it and save resources and money acceleration of changing and restructuring by applying tested practices, motivation to think “out of the box”, promotion and development of learning culture etc. (Kelessidis 2000).

In general, four types of benchmarking are recognized as below:

*Competitive benchmarking* that is performed versus competitors concerning the analysis of the causes of their superior performance.

*Internal benchmarking* which is directed within the organization. It is mainly applied in big organizations with many and different functionalities, directives or locations.

*Process benchmarking* aiming at benchmarking similar processes even among different business sectors (e.g. the remote education in universities and remote training in army).

*Generic benchmarking* regarding other aspects such as technology applications.

Regarding the development of the benchmarking technique, it mainly includes the following phases:

*Planning*, where the organization defines the process and the type of the organization to benchmark against.

*Analysis*, that includes the gathering of necessary data and data comparison, analysis of performance gaps and indications of best practices might to be applied.

*Integration and action*, which is the process and appropriate actions aiming at internalization and implementation of processes and practices within the recipient organization.

*Maturity*, that includes the continuous monitoring giving the chance for learning providing inputs for improvement by repeating the whole process, if it is necessary.

Unfortunately, there is still a considerable confusion regarding the requirements of successful benchmarking (Garvin, 2003). Moreover, in spite of the benefits as mentioned above, benchmarking does not come without a cost and time consuming. These mainly can originate from expenses for travelling and visits to other companies’ sites, consultant fees, cost subscription for access to data bases etc. However, surveys on the issue indicate that the knowledge gained is worth the investment. It is worth mentioning that researches show that companies and organizations with successful implemented benchmarking projects enjoy tremendous leverages and paybacks, within areas of cost reduction, increased productivity and reduced cycled time of operations (Kelessidis 2000).

### 3.5.1. Summary and critique on learning organization in terms of Army

The practices and the concept of learning organization and organizational learning respectively are summarized as in the following table:

Table 1.1 Summary on the learning organization and organizational learning concept

Focus	Organizational learning concept	Learning organization practices
Individual learning	It can take place when organization’s members start feeling that they experience an abnormal and problematic situation within the organization in order to reduce the forces that provoked it	Training personnel and development
Processes and systems	Organization learning is a process that manages the inserted information and the organization know -ledge and experiences	Processing of the acquired information in order to increase problem solving capabilities
Culture	The organizational culture calls for collective learning to improve organization’s performance common processes retain, generation and leverage of knowledge, monitor and improve performance	Creation of such a culture through collaborative work and individuals 'encouragement to use their skills and knowledge within the organization to its benefit
Knowledge	Focuses on knowledge acquisition,	Facilitates the interaction and

management	refinement dissemination, sharing, and its exploitation by putting it into practice. Associates knowledge with past failures and successes for future use	strengthens the organization knowledge base
Continuous improvement	Increase of individuals learning un order the organization continuously to be transformed and be adapted in its environment	Adopts total quality management practices

Source: Based on Wang and Ahment(2003)

While the concept of learning organization and organization learning has been flourished extensively in the recent as the related literature reveals, some researchers and practitioners consider that there is space for critique on the issue (Wang and Ahment 2003). The term of learning organization is a very broad one which means that suggestions and conceptions on the issue may be readdressed. Moreover, in order the concept to be implemented successfully, the center of gravity and the main factor is the individual factor and how it is expected to react within an organization. The concept does not take under consideration the human factor with regard to emotions, ethics and irrationality (Torrington et al 2004). It is also based and expects a lot from leadership side. The question is how realistic such an expectation is, since each leadership may conceive the concept from different aspects, and how individuals are willing to be integrated into organization’s vision. (Torrington et al 2004). The dependence of learning organization on the individual factor guides to the conclusion that individual learning may sometimes not to be that a positive contribution to the organization, in cases for example, the individuals learn just for improving only themselves and for organization’s improvement, or whether their learning contribution has negative effects to the organization (Wang and Ahment 2003).

With regard to the productivity results of a learning organization the question that is raised is whether the adoption by an organization of such a concept is beneficial to it. Popper and Lipshitz (2000)” rhetorically answer with another question “*when the organizational learning likely to be productive?*” (pg 186) and they argue that the organization’s productivity depends on its culture. To this end, they recognize several values that must be in place and be under consideration these are: (i) *Valid information*, (at what extent the related information is complete or distorted and how it can be validated?) (ii) *Transparency* (for example, are individuals ready to accept honest feedback?)(iii) *Issues orientation rather than personal orientation* (is the inserted information properly evaluated? Is it valid and relevant with the examined issue or is it under the attributes of the individual that provides it?) And (iv) *accountability* (how and at what extent the individuals accept responsibility for their action and the following consequences with regard to learning?).

Additionally, the only clear message with regard to the competitiveness advantages the concept provides the notion that the one that learns faster is able to obtain such advantages (Wang and Ahment 2003). Having in mind, that the today’s competitive and turbulent environment, where the viability of organizations depends on the innovation factor, the concept must be focused more on this.

Regarding the issue of the productivity of a learning organization Stokke (2008) connects productivity and organizational growth with three factors: (i) the innovation (ii) the technological adoption by the organization and (iii) the learning organization process, under the following equation:

$$\hat{A} = f(h_i) \frac{A}{A^*} + g(h_a)K(o) \left[ \frac{A}{A^*} - \left( \frac{A}{A^*} \right)^2 \right] + l(o) \left( 1 - \frac{A}{A^*} \right) \text{ (pg. 767)}$$

Where  $\hat{A}$  is the productivity growth, “ $h_i$ ”and “ $h_a$ ” are the labor’s force allocation with different levels of education, (e.g. tertiary and secondary respectively), “ $o$ ” is the degree of organization’s openness, “ $A^*$ ” is the technology frontier beyond this the organization can start taking advantages from technology it obtains and  $A/A^*$ is the technology gap between the existed organization’s technology level and the aforementioned technology frontier. The first term of the right part of the equation represents the innovation’s contribution the second one the contribution from technology and the last one the contribution from organizational learning.

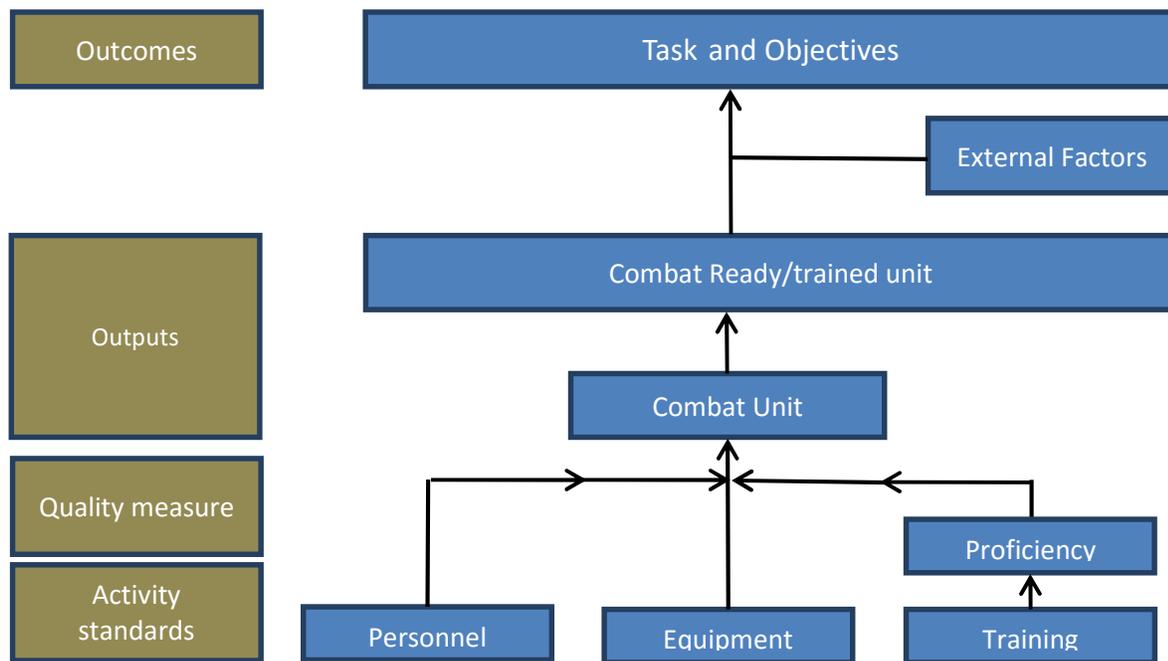
The above argument leads to the notion that organizations that are influenced by unfavorable economic environment and backward economies the organizational learning development constitutes an imperative factor for further productive growth (Stokke, 2008).To this end as analyzed above in this

chapter, this entails the adoption of strategies related to imitation as well as application of benchmarking methodology approaches.

Army as a “total” institution (Kier, 1995) it is a close system which means that the learning process is restricted within itself. Such a learning status may keep the organization out of learning that originates from the outer environment, not allows adapting faster in it. Knowledge must be acquired widely and for this reason the organizational management has to approach practices from the outside organizational paradigms as well.

In the whole production approach it is interesting to see the Hansons’ (2012) approach who suggests a military production model structure in order a troop to be able to achieve its task and objectives. In fact, the production process takes place in the first row of the Chart 3.2 where the training process is the assumption to be fulfilled in order the troops to reach the proficiency standards and the appropriate quality.

Chart 3.2: Model for the output of operational units



Source: Based on Hanson (2012)

Although the model is referred to the Norwegian Army it can be generalized for the Hellenic Army as well.

Regarding the evaluation of organizational learning and learning organizational, in spite of the fact there is a portion of literature regarding the diagnosis with regard to learning performance, very little has been found concerning the learning performance in Army. Dhananjaya Dahanayake & Gamlath (2013) used the DLOQ with minor changes (in fact by removing only the last two segments that referred on the impact of organizational learning on financial and knowledge performance considering that Army does not aim at commercial profits) exploring its application to Sri Lanka Army. However, they recognize that DLOQ have to be improved in order to fit better to this Army purposes.

Shothard et al (2013) mention in their article the development of an Army Learning Organization Questionnaire (ALOO) which was developed from a modified version of DLOQ and OLS fitting well to the Australian Army units. According to the authors the results led to useful and safe conclusions regarding learning behavior at different levels (ranks, formations, culture) but fitting specifically for this army culture only.

Concerning the evaluation and assess of organizational learning the mentioned related models and methods provide with satisfactory answers and conceptualizations perspectives on the definition and

the kind of organization's culture, but they focus rather on diagnosing than to contributions with proposition concerning the way a culture can change (Gerras and al 2008). There is also a doubt at what extend these methods can be applied to Army organizations' culture, taking into account Army's idiosyncrasies and concerning the nature of human activities and one's basic orientation to life. Based on Schein's organizational culture analysis, the same authors suggest a model arguing that fits better in Army's case. However, their analysis is based on the U.S. Army culture and personnel idiosyncrasies. This limitation restricts it's applicability in other Armies, in general.

On the issue of learning performance and culture status evaluation, change and transformation assessment, any related questionnaire and methodology must be based on the particular idiosyncrasies of the examined and researched Army. For this reason the related topic must be considered as a topic for further research for fitting in Greek Army individually.

#### **4. Army as learning organization**

##### **4.1 Current Hellenic Army learning approach**

According to the "Greek Joint Doctrine on Operational Training", deterrence of enemy can be achieved through the existence of powerful military forces which must be fully trained and equipped and of high operational readiness. Analyzing the current Army training frame (HAGS, 2014); actually, it is orientated towards the deterrence and confrontation of a particular threat concentrating the following characteristics regarding the related theory:

It is almost based on traditional methodologies of training based on live exercises.

The encouragement for use of simulation and other methodologies that can substitute live exercises is rather limited

Does not encourage systematically the use of contemporary technologies for training purposes.

Follows traditional instructional methodologies based on the instructor -centered approaches with lecturing and power point training subjects' presentations and physical class -presence of the trainees.

It can be said the issue of feedback is not stress to the required extent.

Does not provide a clear methodology and the appropriate tools for the knowledge integration.

There is not a systematic and scientific approach regarding the increase of effectiveness and efficiency of training and learning process.

There is not the expected and a clear reference to the learning organization practices and organization learning concept.

##### **4.2. The updated Hellenic Army learning approach**

In the updated "Greek Army Policy and Organization Doctrine" (2015) (still draft in the late of 2015), training is defined as a systematic process through which the Hellenic Land Forces, acquire, maintain and improve knowledge, skills and experience, develop spiritual, physical and moral abilities in order to be capable to accomplish successfully any assigned mission during peacetime/crisis and war time. Additionally, it has to puts weight on education out of sheer army training fields, encouraging personnel for academic education as well. The doctrine also stresses that training is the main army mission during peacetime, contributing, to the promotion and cultivation, through this process, of unit spirit; solidarity and leader trustworthy. There is a clear statement that training implementation falls into the exclusive commanders' responsibility at all levels of hierarchy. To this end, the training model has to be developed through combined efforts of all engaged agencies, and entities undertaking related responsibilities and by involving fields such as planning, human resources; equipment and training facilities. It also determines the evaluation process as an integral part of training process aiming at defining and cover knowledge gaps. In this context, it is a requirement that the training results must accessed through qualitative and quantitative methods, facilitating the afterwards analysis. To this end, it is necessary the training objectives to be clearly defined giving every time the chance to count the level of their achievement.

By analyzing the above, the following is worth mentioning:

There is a clear transformative attitude towards to aorganizational learning approach.

It is recognized the need for a decentralized organization concept by assigning clear training responsibilities to all echelons leadership implying the necessity for culture change.

Trainees are concerned rather as the central point of the training process. A robust development of lessons learned procedure can lead to the development of learning deposits. There is not an extensive mention to the use of technology for training purposes. There is not a clear reference for inputs and resources reduction in order the training process to be more productive.

However, the whole procedure is still very immature, since the document in 2015 was still in a draft status, haven't been circulated yet downwards for further analysis and implementation.

### 4.3. Modern trends on Army Learning Models

#### *General views*

Lieutenant General Flowers (U.S. Army Corps of Engineers Commander) in the preface of "Learning Doctrine" (2003) makes a clear reference in organizational learning as an embedded and main factor to the effort of US Army transformation process, stating that *"we can no longer afford to simply brief each other about what we already know; instead, we must create learning dialogues in our team of teams... [yhe doctrine] introduces the concept of organizational culture"*.(preface page)

General David Petraeus has referred repeatedly on his writings and speeches, on learning process stressing out its significance and importance in order Army executing more successfully its warfare missions. In his "The Army/Marine field Manual on Counterinsurgency" book, he marks the value of learning as a key factor for success in any operation; it is a necessary process before forces deployment in the field that can result in fewer life casualties, fewer resources and avoidance of relearn. He points out that leaders who are able to look and search for better new ways to defeat enemy and they who learn and adapt faster in the today's rapidly changing environment are those who win. Concluding, he stresses that learning promotion in Army is a key responsibility of commanders at all levels. (Petraeus 2007).

General Kostarakos (currently chairman of the European Union Millitary Commttee) in his speech to the Greek Association for Atlantic and European Cooperation (GAAEC) about NATO smart defense concept, he stresses the need for the development, of immersed training environments, simulation training centers, e-learning centers and of updated training programs in the context of economy scales within the alliance, in an effort nations to reduce the defense resources in a more effective and efficient way. (Kostarakos 2013).

#### *The U.S. Army learning concept*

The US Army is considered as the most experienced Army worldwide, since the last two decades, it has been engaged in intensive war-fighting operations. Due to this fact, it can be said that the lessons learned which have been derived from those operations can be safely considered as the most validated.

The new *"US Army Learning Concept for 2015 and Beyond"*, actually presents the vision and the mission as well as the directions for implementation in terms of the learning process within the US Army Land Forces. It recognizes the outdated of the traditional training approaches that were based on lecture and power point presentations training approaches that were corresponded in peacetime periods, without defined enemies. The concept surely reflects to a precise establishment of a learning organization structure and the adoption of organization learning concept. General Martin Dempsey defines the mission of the concept as *" an important component for our effort to drive change through a campaign of learning [...] It seeks to improve our learning model by leveraging technology without sacrifice standards so we can provide credible rigorous and relevant training and education for our Force of combat-seasoned Soldiers and Leaders"*. (TRADOC, 2011p.g. i) The concept is characterized as *Learning-centric* stressing on the need for shared learning, shared training responsibilities among Soldiers, tactical units and institutional schoolhouses meeting the army personnel's learning needs, adapting thinking Soldiers and leaders capable of meeting the challenges of the operational environment in an area of persistent conflict, and putting individuals at the center of the training process, by providing support rigorous, relevant; timely training and education.

The central idea of the concept is based on adaptability that permits Soldiers and leaders operating from tactical to strategic level, by making sound judgments under the stress of the contemporary operational environment. To achieve these there is a need for:

*Conversion of the today's classroom experiences into collaborative problem-solving, adopting a culture that engages learners to think and understand the relevance on what and why they actually learn.*

*Exploitation and tailoring previous individuals' experience and competence* through proper pre-assessments before the inauguration of a learning project.

*Dramatic reduction of "slide presentations lectures"* and change of the current methods towards a blending learning using proper simulation and virtual reality applications exploiting the existent technology as well as technology-delivered instruction applications.

Taking under consideration all the operational factors that concern the U.S. Army, increasing at the same time learning productivity.

Does not abort the previous training and learning methods. On the contrary, it exploits the accumulated experience using it as a platform for the further development of the process.

#### ***The NATO learning concept approach***

The North Atlantic Allied Organization is characterized by multi-nationality. This character has as a result NATO as an organization to put certain efforts in order to integrate all those different military cultures. Unavoidable this factor influences its training and learning approach. In fact, NATO mainly integrates its training policies at higher and joint level, during international exercises and other related activities. To this end, NATO responsibilities, in general lines are confined towards the collective and organization levels, while individual training remains largely on NATO and partner nations' responsibility. Nevertheless, the existing NATO concepts regarding designing and planning, exercise execution, and assessments (evaluations and lessons learned concepts) (NATO Bi-SC 80-6, 2013) is a clear organization learning approach that is in direct line with respective theory. (NATO Bi-SC 75-3, 2015)

Regarding the Hellenic Army the possibility of access to NATO and U.S. concepts provides with opportunities regarding the national training procedures improvements at least at exercise level where Greek officers participate in. This accessibility adds advantages for the adoption through benchmarking methodologies regarding learning concept development, fitting of course in the national needs.

#### **4.3.1. A review of key issues**

The general Hellenic Army environment currently is formed by two main factors that potentially can influence its operational status: Firstly, the regional security environment in the broader area of east Mediterranean Sea, with the threat from Turkey to continue to exist. Secondly, the shaped economical environment in Greece that presents clear characteristics of crisis. The latter has as a consequence progressive decrease in the defense expenditures. The budget cuts might affect in the middle-terms time its operational capabilities, with reductions to the available resources, decrease in personnel ceiling, obsolescence of equipment and increase of the maintenance costs and downgrade of the training quality and quantity. It is a fact, that Army will be enforced to learn, in any case. For this reason, it must be proactive enough. To this end, Army first of all must find the balancing point between its strategic goals and available budget, undertaking the lower possible risk that must be the dependent variable in the equation. Secondly, Army has to increase its productivity levels that reflect to its operational capabilities, based on the general mathematical equation of "*Productiveness = Quantity output/Quantity input*". This can be done through the assistance of updated learning policies, by adopting organization learning processes and learning organization structure.

Two concerns are raised regarding the course of Army towards the adoption of an updated learning model:

Greece as a nation, in recent years has participated only in low intensive and peace keeping operations that they actually do not reflect to the real and full Army's mission requirements. For this reason, Hellenic Army Forces do not obtain validated lessons learned with regard to training and learning corresponding to a war crisis engagement or to a high intensive war case. So all the available lessons are mainly coming from national exercise activities, institutional schools, analysis of lessons learned of foreign armies and participations in low intensive operations.

Second, the up to now learning model hasn't developed a robust knowledge management for acquiring, processing, integrating disseminating and sharing knowledge. The existing knowledge is rather scattered and not easily accessible in time and place. This has also as a consequence the weakness the existence of previous comparative results not to be at the required extent.

In the very recent years the organization learning and learning organization concept has been started flourishing and be approached substantially in the military context, in spite of the fact, that the related literature is still rather poor. However, this development gives an advantage to the Hellenic Land forces that can proceed with such an approach learning development mainly by following benchmarking methodologies.

The under development U.S. Army learning concept presents a complete approach with regard to learning organization concept for the following reasons:  
Recognizes the need for army transformation towards this concept, under the pressure of the current operational environment.

It takes under consideration, as a principal rule, the learners' needs, who are the center and the focal point of the learning process, by developing the appropriate learning environment and by creating space for innovation and initiatives at the individuals' level accompanied with "*accountability, adaptability and initiative, lifelong learning (including digital literacy), teamwork and collaboration, critical thinking and problem solving, multinational competence and tactical and technical competence*" (TRADOC 2011, pg. 18)  
Forwards learning process in order to be adapted to the rapidly changed operational environment demands.

Promotes a progressive change of culture and pushes leadership to act to this direction.

Involves and produces the mechanisms and practices that must be in place in order the learning process to be implemented effectively.

Exploits the available technologies for training and learning purposes.

Reduces the cost and the resources' requirements.

It is based on scientific ground.

Last but not least it is based on prior experiences of the U.S. Army obtaining validated lessons learned, extracted from real life high intensive war operations.

NATO is also in the same line, in a different approach though, mainly due to its force structure, the nations' relationship within and with the alliance, their different military cultures, and its different strategic goals and mission.

Taking under consideration that the Hellenic Army apparently is an organization that operates in an unfavorable economic environment leads to the conclusion that it has to take actions and careful steps towards its transformation as a learning organization leveraging any kind of time and other resources' investment to this end. Having in mind the international trends on the issue, the adoption of imitation strategy seems as the appropriate action in order to catch up the current developments, combing the strategy's advantages with low cost. In addition to this, benchmarking approaches would be in favor to be adopted and developed, due to the fact of the easy access and gathering of related data (eg. either through Greek Officers who serve in NATO positions, or trained in US Army or other ally's army schools and vice versa or through on purpose mutual training visits) that can facilitate analysis and integration in the Hellenic Army needs.

## 5. Case study

The purpose of this case study is to indicate at what extent the related theory can be applied in practice in the Hellenic Army Land Forces.

In spite of the fact, that the Hellenic Army Land Forces have started taking steps towards a change regarding the improvement of its learning model, it can be said that the whole process is still in a premature stage and no clear evidence exists regarding the development of a related management aligned with the existent theory. However, it was considered as necessary to be examined in practice, whether the Hellenic Army obtains capabilities and capacities to adopt a modern learning concept or how far it is from this goal. To this end, during the development of this research, there was an excellent opportunity for observations in terms of the topic during a real exercise a training event. The activity took place, in a real Greek military high readiness formation at brigade level. It is worth mentioning that this kind of activity with the characteristics and assumptions as they are described below took place for first time in Hellenic Army and intentionally knowledge was used that obtained during the study of this research.

### 5.1. The problem

The above mentioned military formation's command group had come to the conclusion, after the analysis regarding the training program of the upcoming years, that the prolonged economic situation in Greece and budget restrictions might bring difficulties to its effective implementation, by encountering funding limitations. This possibility contained the potential risk to lead to a downgrade of the formation's training objectives. Additionally, during the aforementioned analysis, the formation command group inferred, that knowledge and training gaps among personnel could be appeared with the inherit difficulty not to be covered quickly in the future. Such a situation could also lead to negative consequences, especially for junior officers, NCOs and soldiers who would miss training opportunities.

Due to the above reasons, there was an apparent need for a new training approach to be developed regarding exercises, in order to tackle with potential problems and to overcome any future budget restrictions. As a solution in this challenge, the design and execution of a Computer Assisted Exercise (CAX from now on) was proposed<sup>1</sup>. The main reason for choosing this option was that the concept has started to be applied in other armies and in particular in NATO (Joint Warfare Center/NATO) and there is also an upward trend for further adoption. (Joint Warfare Center/NATO).

#### *Limitations*

The exercise was designed in order to accommodate specific training needs of a specific military formation and not in particular for researching purposes for this research. Moreover, the results were analyzed under the operational perspective. To this end, it was not possible all the related data to be released, but just a portion of them that reflected to the topic and the related theory of this study as long as there was not any security violation.

### 5.2. Delimitations, challenges and assumptions

The officer in charge was the author of this research. Thus, the observations that were presented in this case study were combined with the related knowledge that acquired during the literature research. To this end, many elements with regard to organization learning and learning organization concept were taken under consideration for the exercise design and execution.

The main challenges and assumptions for this project were condensed as follows bellow. [For studying facilitation and comparison reasons, related remarks are mentioned (described in italics fonts) that reveal the relationship with the theory].

The exercise environment had to simulate the real one of the formation's area of operations. The engaged military friendly forces; army personnel, equipment capabilities and numbers; command and control systems; trainees' exercise environment should have reflected the real ones. As far as the enemy is concerned, its real estimated capabilities were taken under consideration depicted in a war game simulated environment. (*Virtual reality conditions, adaptation to the real training needs of learners, use of war gaming simulation*).

The exercise budget had to be kept at the most possible lower level, while the training results should had been proven higher compared with traditional exercises. (*Effectiveness and efficiency factor*). The necessity for confirmation from the command group side to support the project and to be convinced about the purpose, efficiency and effectiveness of the exercise mode (*Leadership support factor*).

The reaction of the exercise planners' staff officers to accept the utility of the exercise. In fact, when the concept of the exercise was initially presented, there was an apparent doubt regarding the feasibility and potential training results. The dominated objection was supporting that the results would be very poor comparing with those of live exercises, even the latter cost is much higher. It is worth mentioning that these objectives were coming mainly from higher rank officers. (*Unwillingness to change culture and existed values due to justifications of past assumptions as a source of pride and self-esteem*).

The absence of proper staff personnel with respective exercise background and no past examples. The CAXs type exercises demand a special way of planning and a particular different way of staff employment and forces deployment. (*Lack of knowledge at individual, group and organizational levels*).

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<sup>1</sup> The CAX are exercises that are executed with the assistance of electronic tools and computer applications such as war games, simulation systems, and other ancillary tools, while it is possible the of extended use of virtual reality environments. The existence of robust information systems is necessary.

Technology challenges, since a part of the exercise control staff, computer operators and other technology resources were located in Athens and had to participate in the exercise remotely. (*Technology infrastructure and cost reduce*)

The information's systems capacity to correspond to the requirements and its security classification capabilities (*The existence of robust and secured information systems as an assumption for learning organization construction*).

### 5.3. Actions taken to overcome challenges

In order to overcome the challenges the following actions took place:

#### *Exercise preparation*

All coordination meetings and pre-training activities with the remote exercise actors were taken place through Video Teleconferences (*cost reduction, blended training, and confirmation of the existence of robust Information Systems*).

The commander of the formation publicly announced his support on the project and declared that it was included among its main priorities and of top goals of the formation. To this end, his intention was to strongly support it (*Leadership support and strong signs for the need of culture change*).

A new exercise core planning team, was shaped with new staff officers younger at age was employed, different than the current nominated planners. The officers worked in groups, under the exercise officer's in charge supervision, and they were fully encouraged to propose problems' solutions by thinking "out of the box" (*New culture development creation, sharing and establishment, of new knowledge, innovation, learn to unlearn approach*).

Before the execution of the exercise all the information systems underwent extensive capacity tests proving their robustness, adequacy and their classifications capabilities with the final results fully satisfactory. I-cloud technologies also were used. (*Information systems infrastructure existence and adequacy*). The exercise planning and execution was based on NATO and other foreign bibliography adapting to the national and the particular exercise needs. Moreover, it was used the documentation of previous NATO exercise as a planning paradigm, although this exercise's, training objectives and operational environment was substantially different (*imitation and benchmarking methodologies*).

#### *Exercise execution*

The information systems were corresponding perfectly to the requirements of the exercise (*information systems existence and adequacy*). It was ensured the virtual reality conditions for the training audience by working in their real command posts' environment or in appropriate response cells simulating real conditions (*cost reduction, training reality*). During the exercise the training audience was taking feedback on their exercise operational actions from the exercise control element and vice versa in order to fill procedural and design gaps mainly concerning the planning dysfunctional ties and the "how it goes" (*Lesson Learned collection by After Action Review technique*). During the above procedure everybody was strongly encouraged to contribute in a free way to lessons learned collection regardless the rank and the position. Moreover, it was made clear that during the whole development of the exercise the asking goal is to fill learning gaps and correct mistakes (*Culture change, Power distance*).

Special NATO computer applications were used for exercise control purposes and counting the percentage of exercise goals achievement (*technology existence, information systems, qualitative and quantitative counting of the results*).

#### *Exercise evaluation*

Exercise debriefings were taken place immediately after every day exercise end (*Lessons learned collection by After Action Review technique*).

An exercise questionnaire was delivered to the participants focusing on the exercise needs and exercise objectives' fulfillment from where statistical results were retrieved, (*qualitative and quantitative counting of the results*).

Further official reports were forwarded to higher echelons regarding the results of exercise and for their further assessments and actions.

#### 5.4. Exercise Data Validation

##### *Framework and aim of the research*

The statistical analysis of the exercise was developed in the framework of the (CAX) with the purpose to extract useful elements concerning the learning value of the activity. Moreover, many of results were coming from observations and discussions with the participants.

The aim of the research was to record information data related with the effectiveness and utility of army computer assisted exercises and proceed with a first appraisal regarding training and learning benefits by using other concepts, procedures and practices for national purposes.

##### 5.4.1. Methodology and survey construction

The research was based on the combination of qualitative and quantitative data that were collected through different ways as bellow is mentioned. The Analysis data was done with the assistance of STATA13.1 statistical application, the MS office xls and the statistical function of a dedicated for this purpose NATO computer application.

The related data were collected as below:

- A special evaluation team was constructed with subject matter experts who acted under a special collection plan with mission to concentrate and validate observations.
- After Action Review technique was extensively used. Debriefings were taking place immediately after the end of every training day.
- A questionnaire was delivered to all participants in order to capture remarks from all the engaged personnel. The majority of the questions used a five point scale from "Highly disagree to highly agree" The five point scale was preferred in order to mitigate the neutral tendency. Additionally there were a number of closed question where only a "YES or NO" respond was required as well as open questions where the participants were requested to express their opinion freely.
- A special NATO computer application was used to gauge the fulfillment of the posed training objectives statistically.

Personal interviews were taken from key personnel regarding their views in terms of the value of the exercise mode.

The results were presented in an analytical way to whom they were concerned.

##### *Validity, Credibility, Reliability*

The collected information from different resources was crosschecked to the extent that it concerned the fulfillment of the exercise objectives; in the cases that it was possible, since each data collection source was serving different level and kind of information. Regarding the delivered questionnaire, it was anonymous and the participants received the confirmation that the answers would be restricted and not going to be announced to the rest of the personnel as well as the collected answers were to be used only for researching reasons after their statistical elaboration. However, it must be noticed that it was orientated and developed to the exercise needs and for this reason there was an inherit limitation for all the related data to be released. Moreover, it was made clear that the research results were to be used only for the improvement of the exercise concept, ensuring by this way the honesty of the participants regarding the given answers.

Regarding the questionnaire the total number of returned questions' responds was 114 out of the 122 that were delivered to the participants. The survey participants were coming from both training audience and exercise control staff components. One of the encountered problems was the "missing values" namely those questions which were not answered for unexplained reasons. Two questionnaires were totally excluded since less of 50% of the questions had been answered as they were considered that either they weren't filled with the proper seriousness or the answers were given without much concern. Eventually 112 questionnaires were included in the research.

Regarding the consistency of the questionnaire the researched focused in the training segment since it was considered the most homogeneous regarding the sample and closer to the research inquiries Cronbach alpha was above the 0.70 recommended level (0.79 in fact), which demonstrates an acceptable level of statistical reliability. As far as the rest of the questions are concerned they had a different direction towards reporting reasons and not for statistical research.

### 5.4.2. Demographics

In the survey only military personnel was participating from Lieutenant Colonel to private soldier rank. The ranks of Lieutenant Colonel and Major were classified as Higher Rank Officers (HRO). All the officers had been graduated from the military academy and at least the military staff officers' school (A number of them had also graduated from the Joint War College as well). The officers from the rank of Captain to the rank of Second Lieutenant were classified as Low Rank Officer (LRO) and can be characterized as junior officers. All had graduated from the military academy while a number of them had also graduated from the military schools at tactical level.

Regarding the Non Commissions Officers (NCO) they were classified in two categories: Those who had graduated from the respective military academy and those who serve in army as professional Soldiers and obtain special technical skills and specialties.

No further discrimination was asked in order to avoid the risk the answers to be recognizable.

Table 5.1 Exercise Demographics

Higher Rank Officers	Lower Rank Officers	NCOs Academy graduated	Military NCOs non Academy graduated	Private soldiers
17	33	6	50	8
15%	29%	5%	44%	7%

Source: Author

As far as the interviews is concerned all the participated units' commanders and the heads of the exercise various teams were included.

### 5.5. Conclusions

Although the exercise objectives were focusing on the needs of this particular military formation, much information were extracted with regard to organizational learning and learning organization's concepts, giving serious affirmative evidence for further development to this direction. It is worth noticing that the outcome of the exercise was characterized as very successful from the military training aspect, by fulfilling all the pre-posed objectives and assumptions to a high extent. In particular, with regard to the research's topic the results can be considered as encouraged, since it was achieved a high percentage of its goals regarding its learning purposes indicating evidences for further improvements under the today's financial conditions. The personnel's background and cognitive level as well as the available infrastructure reduced the cost and the requirement for additional resources to the zero level. However, as a general remark barriers to the process were recognized indicating the need for changing the current knowledge management processes and procedures.

Based on the segment structure of Dimension Learning Organization Questionnaire (DLOQ) and the Army Learning Organization Questionnaire (ALOQ) (Stothard, 2014pg 10 and 17) the information from observations and interviews' responses that were obtained during the exercise can be assessed as below:

#### *Individual level findings*

##### *Dialogue and inquiry: robust discussion and asking questions.*

The initial resistance and the raised objectives regarding the results and the utility of such a kind exercises mainly by higher rank officers who insisted on the traditional training ways can be said that created barriers at the development and establishment of a learning culture. However, the built of a new core planning team charged with the responsibility of the exercise design and the challenge of participation as training audience motivated personnel to work and study individually contributing with knowledge to the exercise.

##### *Continuous learning: opportunities and resources for learning, training and education.*

The issue was not able to be accessed with regard to this particular activity. However, it was stressed that the implementation of similar activities at higher levels anticipates for further knowledge on the subject. This view is enforced by the observed lack of the related experience regarding the design of such exercises, mainly from technical and methodological prospective.

*Team level findings*

*Team learning and collaboration: support within teams for sharing information and supporting each other's learning.*

It is a fact, that the activity promoted the knowledge sharing among the participants during all stages of the exercise. Characteristically is mentioned that 71% according to the questionnaire survey claimed that learned from their peers, while a 73% had the opportunity to apply processes that they already knew but they seldom had had the chance to practice them adding by this way new knowledge to themselves and peers.

The after action review technique and other lesson learned collection means contributing to the knowledge sharing during and after the exercise process.

Additionally, the confirmation by the command group that "made mistakes" are rather learning opportunities than causes for negative remarks and the promptness for innovative thinking encouraged exercise members to participate more actively.

*Organizational level findings*

*Leadership supporting learning: extent of leadership enables learning by practice and by resourcing.*

The leadership support can be characterized as the milestone and for the successful implementation of the project. The commander's intention to put the project among his high level priorities passed to its staff a clear message for changing culture regarding the way of exercise planning and execution. His contribution was also decisive from the aspect that he leaved the necessary space for initiatives and innovation and by supporting the activity with the needed resources.

*Embedded systems: information systems access and utility.*

The available information and other command and control systems worked and supported the exercise perfectly. The available infrastructure was proven more than adequate. This had as a result to reduce dramatically the cost of the activity since there was no need for further infrastructure establishments. Additionally, the war - gaming computer applications that we reemployed for simulation reasons accommodated very satisfactory the purposes of the exercise. The new inserted for use, NATO based electronic command and control systems for the exercise control were proven user friendly to the participants and were characterized as useful tools.

The combination of training before and during the exercise, locally and remotely by using the available information systems proved the potential capabilities as well as the effectiveness of blended training. The fact that 68% had a clear vision of the exercise organization and their mission enforces this view.

*System connections: does the organization support broader perspectives.*

The exercise design required the use of resources and systems that were located outside the formation location and mainly regarding staff elements and information systems infrastructure that they eventually were afforded. From this aspect it can be said that the capability for broader perspectives is potentially in place. However, it was observed that the current systems regarding the knowledge management was not compatible to the required extent. Moreover, the formation forwarded the exercise specifications, requirements and results to higher echelons, supporting the implementation of the project for similar activities at broader level.

The analysis of the training results using statistical methods and specific computer applications gave strong evidence regarding the utility of such tools, since they facilitated, the process of recognizing performance gaps through a more scientific and objective approach.

*Shared vision and empowerment: degree of autonomy and engagement with the organization's mission and vision.*

The initiative from the formation's leadership side to undertake such an activity, under budget restrictions adapting to its own needs proved the flexibility of decentralized organizations. However, the activity was totally integrated with the Army's mission and the vision. It worth mentioning that a percentage of 87% the questioned personnel suggested that the exercise should be inserted in the annual exercise program. However a big portion 75% believes that there is much space for further improvements

*Innovation*

The exercise itself can be characterized as an innovative action. The leadership initiative to undertake the risk for the implementation of the project promoted the learning process although many

times innovation contains the stake of failure having spending resources in vain. The statement towards the engaged personnel to “think out of the box” motivated it even more. It is worth mentioning that junior officers and younger personnel were more open to accept innovations and different ways of thinking even at the operational level, while the higher rank officers appeared a resistance to changes. This can be explained because of the formers’ familiarity with new technologies and their cognitive level enabling them to assimilate faster new knowledge and information.

## 6. Conclusion

The environment that has been shaped due to the economic situation in Greece has created many negative implications in the country’s society leading economy backwards. Hellenic Army within this environment has to deal with the challenge to keep being in position to correspond effectively to its mission ensuring the country’s security within an unfavorable economic environment. Although Hellenic Army is not an organization that concentrates characteristics of an organization in crisis, the continued budget restrictions may influence in the future its operational capabilities and its readiness status. It is not impossible more funding reductions to follow under the consideration that resources currently dedicated to the Army to be allocated in other sectors of the economy To this end, Hellenic Army must be proactive enough in order to be more effective which means to be in position to execute its mission, tasks and objectives and at the same time to be more efficient by being less costly reducing the currently required resources. An effective training process definitely can assist to this direction.

The current learning model must be updated since is still based on traditional methods which require the physical trainees’ class -presence, lecture presentations, be instructor-centered, big number of live exercises that requires a respectable amount of resources. However, organizations that act in turbulent environments are enforced to learn in any case. The same happens with Hellenic Army that has started to take steps forward. The updated approach on training as it has been expressed in the “Greek Army Policy and Organization Doctrine” (2015) moves to this direction giving strong evidence for substantial improvements in learning process, embodying a lot of critical elements of the learning organization concept. Nevertheless, the whole procedure has just started and cautious and conscious steps must be done from now on. Appropriate restructure is required aiming at the facilitation of learning process by being transformed towards a learning organization. While the existent literature and practices in corporation sector is actually rich, little can be found concerning military. In fact, the adoption of such a concept very recently has started to flourish within army context globally. In spite of the fact, that business organizations could work as paradigms for the military particular difficulties are encountered. These difficulties stem from the nature of the army organization which is a close and “total” organization with strong hierarchical and bureaucratic structure. These traits have direct implications to the culture of the Army and in the effort to changes. Additionally, there is still a lot of discussion about how the concept of organization learning and learning organization can be successfully implemented. The fact that it is based on the individuals’ learning behavior either from leadership or learners’ perspectives as well as the appropriate knowledge management is concerned; raise a lot of considerations that have to be researched further. Nevertheless, the theory and practice teach us that successful learning organizations are getting more effective and competitive by saving resources. Moreover, organization learning constitutes an imperative factor for development, in particular for organizations which operate within backwards economies and a strong assumption for production growth by applying policies that promote innovation.

### *Army learning models trends*

Learning organization and organization learning concept has recently been inserted in army as a complete concept. The U.S. Army concept for 2015 and beyond adopts a clear direction towards the aforementioned learning concept, presenting all the necessary mechanisms for a changing learning culture to the operational and financial benefits. NATO also moves in the same line at different level though. The trend for adoption of such learning policies globally offers to Hellenic Army a lot of opportunities to develop similar policies.

## 6.1. Potential developments

There is not clear evidence about the current capabilities of Hellenic Land Forces and how fast they can move towards an army learning organization transformation. However, the presented case study

strongly indicates that there are a lot of the related capabilities already in place, being supported by substantial information systems infrastructure. The case study also indicated that the majority of the personnel are open to accept innovative learning methods. This fact is more intensive among junior officers and the younger in age. This is mainly justified due to their familiarity with new technologies. However, adaptation and reconsideration is demanded as far as the knowledge management is concerned in order to be more compatible with the existent related procedures. The scientific approach of results' analysis with the use of statistical tools facilitates the performance gaps to be indentified objectively and be defined the proper remedy actions that need to be assumed by using comparative methodologies.

#### *Proposals for implementation and further researches*

This research created an initial theoretical background towards the improvement of learning model in the Hellenic Army. The value of this study is that touched for first time the issue with regard to this specific organization. In particular, it provided with the theoretical background of organization learning and learning organization, proposing the appropriate tools and methodologies for adoption that can work as a basis to the development of an effective and efficient training model. To this end, as it was mentioned above systematic steps through robust and adapted management processes is essential to be adopted.

At these initial stages, towards a learning transformation, imitation and benchmarking methodologies are proposed since they can provide fast and safe steps, taking under consideration the indications that Hellenic Army has already at its disposal many of the needed instruments. The adoption of innovation strategies are not strongly proposed as long as the assumption of high costs may be required especially when they are associated by a high risk of failure.

However, the issue is very broad not possible to be covered adequately in this study; further and more specific researches are required focused on Hellenic Army specifically. What proposed as a first step are researches regarding current learning organization status and related estimates on the Hellenic Army culture characteristics. The results could find immediately practice since they could be used as reference points by defining gaps and revealing barriers to the further development for an improved learning model fitting in the Hellenic needs and requirements.

#### 6.1.1 Limitations

A military research almost encounters restrictions that touch sensitive security national sectors. For that reason much of the information that may be useful with regard to such a survey, are protected due to its confidential security classification. Additionally, the researching findings that have been based on military data that characterized as confidential are not releasable for the time being. Due to these facts, for the development of this research the following approach was implemented:

The study was limited to the management planning aspects.

The data that contains military (international or national) information was emanated from open sources and from officially unclassified documentation.

The theoretical framework, background and analysis were based on the management and crisis theory and related military documentation when it was necessary.

The results that are coming from primary Greek military survey and army activities are released to the extent that was related with the topic as long as they do not provoke any security violation.

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