

Higher Education: Military Higher Education Organizations

*A study of: The Military Higher Education
In Mexico: An Invisible sub-system*

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Abstract

To expand knowledge on the field of higher education in general and to collaborate to the particular basic understanding of the military higher education in Mexico in particular, the present academic work was conducted. This exploratory study retrieves relevant data through basic research about the nature of military education and the higher military education organizations in Mexico. Results revealed that the public education sector in Mexico is wider and not only limited to the education of civil society; due the existence of a sub-system of higher education. Such sub-system is the state funded Military Higher Education. Moreover the analysis of the data gathered dropped as findings marked differences between the civilian higher education and the military higher education, on its core objectives, and institutional behavior -such as mission, knowledge delivered, steering of coverage, enrollment policies, transparency and accessibility to information related to the military educative organizations, etc.. Thus the current research is a humble attempt to collaborate with the civilian academic efforts to study the military higher education sub-system in Mexico, as military higher education is part of spectrum of public education sector which most of the times prevails inaccessible or invisible to society in general terms, due to the intrinsic nature of great isolation and fragmentation between civilian society structures and those of the military. Therefore the present study makes emphasis on the relevance for a sustained effort on doing research from within the academic civilian spheres, of the Military Education in general, and in particular of the Military Higher Education and related institutions during peace times and independently of its context. In order to keep track on the evolution, changes and trends of the military education, and to help on the understanding of the *phenomena* by creating relevant knowledge for the benefit of both, the civilian and the armed forces society.

Key words: education system, education sub-system, public education, higher education, military education, military higher education, military professional education, organization, institution, competency, beliefs, values, public education sector.

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Dedication

A El creador de mundos

A mis padres:

Rosalía Monroy López y Jesús Antonio Chagoya Arzate

A mi hermano

A Rosi

A Lenus (+) y el Tío Jorge (+)

A Leonor López Cortés (+)

A Paula y Diego

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Foreword

...and I would like to sing all over again if ... ‘the *act of coming to know something involves a personal transformation...*’ Where ‘...*The knower and the known are indissolubly linked and changed in a fundamental way*’ (Peat, 1996). Then *Higher Education* is much more than only a set of policy related practices or a field of study, it is not just a “universal” way of thinking or a modern kind of philosophy. Higher education should be more about practicing the art of sharing this universe, its knowledge and our experiences with each other by teaching, learning and doing research. Higher education is probably our best chance to create a reasonable future. Let this work to contribute to do so.

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1 Introduction (Conceptual Basis)

This first chapter aims to present fundamental concepts of military education, in order to contextualize this sector within the national education system in Mexico. Therefore, education, teaching, learning, systems, military and military education thru this chapter are up to be defined.

1.1 Research problem

It is evident that the armed forces although part of society are structured and organized in a different manner than the rest of society. Also is well known that modern states that count with a regular army, count with infrastructure and organizations exclusively conceived for the training of the military. In the case of Mexico that can be traced back into the national legislation. According to Article 4 of the Law on Military Education of the Army and Air Force:

The military education is to train military to practice and exercise of command and conducting teaching activities, dissemination of culture and research for the Mexican Army and Air Force, instilling a love of nation, institutional loyalty, honesty, service awareness and improvement and the responsibility to spread to new generations the values and knowledge received. "(Art. 4, Ley de Educación Militar del Ejército y Fuerza Aérea Mexicanos, p.10).

Under Article 6 of the same law , military education has six objectives :

- a) The full and harmonious development of the members of the Mexican Army and Air Force;
- b) Encourage the development of faculties for the acquisition of knowledge, and the ability of observation, analysis and critical reflection.
- c) The permanent link between education and training of the military.

- d) Promoting awareness of the institution, as well as values and military doctrine .
- e) Promoting the value of justice, law enforcement and equality of individuals before this, along enhancement of the knowledge of human rights and its respect.
- f) Strengthen knowledge aimed to the preservation of health and environmental protection.

The Mexican Constitution (2011) stipulates that the public education offered by the state is to be regulated, organized and commanded by the *Secretaría de Educación Pública* (Secretariat of Education). Therefore all public and private higher education institutions in the country are regulated by such a ministry. Nevertheless the national constitutions also states the *Secretaría de la Defensa Nacional* (Secretariat of National Defense) is responsible for the organization and articulation of the military training at all levels. That education offered by the army can be referred as military education. The purpose of this research is to produce knowledge of the military education at tertiary level. A organizational *phenomena* that we will refer as “the military higher education” which is a form of the education sector which might have singularities with regard to civilian education as it is ruled and taught not by civil institutions but by the military forces of a modern state, while organized in a separate bureaucratic structure from that of the civilian education and society.

It should be noted that the Organic Law of the Federal Government states that the Ministry of Defense is responsible for the institutional steering of the professional education of members of the armed forces and military training of civilians in case of being necessary.

With regard to accessible research concerning military education in Mexico we can affirm that is scarce, unlike what happens with civil education, which has been studied extensively from different perspectives.

Given the current circumstances, the combat undertaken by the Mexican government against organized crime, has involved the increased participation of the national armed forces in the country, it is important to have knowledge production about the military education , in order to generates a better development of the armed forces, according and in correspondence to the civil society. However, society has no accessible information over the education on this very specific educative sector, although military education just like the civil public education, draws on public funds. So from an economic perspective we can say that military education is of public character.

It has been said that the aim of the military forces is designed to safeguard national security, as consequence training of its members is based on vocational and professional characteristics, involving the ability to interpret, communicate and execute orders , the ability to make decisions , the ability to direct subordinates ; handling military tactics and weaponry , the acquisition and awareness of values as honor , loyalty , patriotism and dedication to service . In turn, and as a resultant the military education is an element that facilitates progression of military personnel in the hierarchy of the armed forces (Garduño, n.d).

This implies differences in the characteristics of vocational and professional military education system and civil education system that deserved to be further studied.

1.2 Research Questions

All of them within the Mexican specific context.

I. How is the relationship between the army higher education and the state?

II . How does the military higher education cohabit within the national educational system ?

III . Why public policies in military higher education differ to those of civilian public higher education?

IV. Why goals of the military higher education differ from those of civilian education system?

V. Of what type is the military higher education system attending to coverage rate?

VI. What funding source military higher education has?

- VII. How is it organized and regulated the military higher education in Mexico?
- VIII. What educational model(s) apply to the Mexican military higher education?
- IX. What profile should students of military higher education system have?
- X. What capacity has society to inform itself about various aspects of military education?
- XI. What levels of defection exist in military higher education in Mexico?
- XII. What are the main influences received by military higher education programs?
- XII. How is the horizontal labor mobility of graduates of military educational system into civilian life?

1.3 Objectives

Objective: The main objective of this basic research is to present an academic theoretical description of military higher education within the Mexican context in order to elucidate its nature as a social *phenomena*.

Secondary objectives:

Detect similarities and differences between military education and civilian education and relationship with the environment.

1.4 Motivations

The main motivation for this work is to contribute on the knowledge production about the military higher education in Mexico, as the military higher education in general has being a field of study scarcely explored by civilian academics, although it has a great impact on the social reality of the country, given the increasing participation of the armed forces in national affairs, especially in tasks aimed at maintaining internal public security. Therefore, in such a context, it is important that the civil society is aware of the military education system, development, practices and performance.

Also a matter of interest is to investigate the influence of the global environment in various aspects: military, political, technological and socio-economic, that affects the role and functions of the armed forces at the local level. It is important to consider the international trends, technological developments and the need for change and adaptation as a relevant part of military education.

1.5 Theoretical Framework

In this section the theoretical approaches on which this research is based are briefly reviewed. Particularly definitions of education, teaching, learning, organization, system, educative system, higher education, military professional education and military are conceptualized. It is intended to provide an overview of the concepts that encompass the *phenomena* to be investigated.

1.5.1 Education

Education is the development of the necessary skills to gain new knowledge. It is a process of transmitting “the values of cultural heritage (...) in order to ensure the continuity of culture and social organization, as well as the progress of civilization through analysis, criticism and constant review of these values.” (Álvez, 2000 , p. 20)

Consequently, education produces social behaviors required for individuals and groups within society to participate in it actively and competently. According to the pedagogue Pestalozzi, education aims to: “man's elevation to the true dignity of a spiritual being”(1986, p. 172) , so it should not be confused with “a series of admonitions and corrections, rewards and punishments, advice and directions, gathered without dignity of purpose neither dignity of execution .” (p. 174).

The education provided in a systematic and institutional form is formal education which is based on the school system (Zaki, 1988). The school system is comprised of a set of subsystems, such as students, faculty, administration, teachers' unions and the physical facilities . Also, the school system integrates various stages, which start from primary to tertiary education level. The basic unit or common denominator of these systems is the school, which is a social institution - public or private- , whose mainly function is to: “integrate young people into society, ensuring equal opportunities, creating the basis of national unity , ensure social cohesion and the location of individuals in society and contribute to national development (Pain , 2002 , p. 29).

For these reasons, during the twentieth century and twentieth first century prevails in Mexico and many countries the trend that education is a state function. The purpose of formal education is the “development of a “*career*” allowing students to possess adequate skills to do a job, that society recognizes properly” (Izuzquiza, 1990, p. 308). Therefore, formal education makes and creates “abstract cultural ideals, such as the humanities or technical expertise” (Izuzquiza, 2000, p. 308) .

Professional education is a component of a social organization which is complex, especially in the case of the military education because it lies within a government agency, which requires educators to be trained and to be professionalize, in other words demands from them to be specialized in a different academic environment from civilian education.

The foundation of formal education is the basic level consisting of the preschool and elementary levels. The main function of basic education is to provide children the means and methods of access to knowledge, as it is the use of written materials, other than what you get in the informal education provided in the family context or non formal education. Hence

according to Larry Chase (1993), during the infancy of the individual family and educational institutions complement to provide the child with a set of norms, values and knowledge that will serve to develop in society. This is based on “organized learning and discipline of intellectual work.” (Pain, 2002, p.30). In addition to the educational work, school baseline is also responsible for custody and care of the individual during school hours. Thus the transmission of values that might be diverse from those of the family environment can occur.

In the words of Pestalozzi, the purpose of formal education “is not the improvement of academic knowledge, but (...) the efficiency for life. This has not to do with habits of blind obedience and diligence in submitting to the requirements, but to prepare for an autonomous behavior” (Pestalozzi, 1996, p. 175). Then the individual is formed into an enriching paradox, to be independent and to be useful to society.

1.5.2 Teaching (Didactics)

Teaching meanings vary according to context. In the field of formal education, teaching can be defined as the instruction of school subjects based on certain standard elements, particularly models, resources, systems and principles. The rules are mandatory rules, which aim to ensure that students achieve a sufficient level of apprehension of knowledge. In western modern societies the rules are relatively flexible, to the extent that students have a more active role in learning (Sanchez, 1993).

The models consist of structured schemes; programs divided into phases the educational process, in order to make it correspond to specific objectives and activities. These phases are evaluated separately, based on quantitative and qualitative indicators to reflect how much and how students have learned.

Didactic resources are considered educational methods , dynamics and materials that serve as a foundation to build teacher education work . The systems consist of structures that are “controllable, repeatable sequences to internalize culture based regulations, prescribed or pre-conceived decisions.” (Sanchez, 1993, p. 408)

Meanwhile, the principles are general assumptions concerning teaching, which make up the corpus of values education required for teaching. The principles are “a set of systematic knowledge of the educational *phenomena*.” (Hubert, 1999, p. 203-204)

The teaching can be seen either as a science, technology and art (Carr, 1996). It is a science, since its objectives and goals are well defined and organized, as means of transmitting culture of a society. Technology, teaching is based on a set of knowledge structure that is transmitted through instruction, these models integrate aspects such as monitoring, evaluation, efficiency, transmission , instrumentation and research. It is considered that teaching is an art, since it is intended that the process of teaching and learning takes place naturally as a manifestation of human creativity. It can be concluded that didactics are “a pedagogic discipline responsible for analyzing, explaining and guiding the process of teaching.” (Sanchez, 1993, p. 410)

1.5.3 Learning

The synthesized learning can be approached from two leading perspectives: the behaviorism and constructivism. Behaviorism believes that the child's contact with its family atmosphere , composed of people, objects , events and interactions between them , resulting in an experience that produces a change in the behavior of the infant, change that can be more or less permanent . This change is learning. (Skinner, 1987)

Thus, learning is "the process by which information is acquired through experience and becomes part of the storage of events in memory of the organism." (Forgus & Melamed, 1999, p. 11). It is an integrated process, in the sense that information that collects an individual, favors the acquisition of new knowledge. Learning promotes acquisition of “the ability to respond appropriately to a situation that may or may not have encountered before. (...) In the learning progress in terms of efficiency, that is, according to some performance criteria such as speed, absence of mistake, economy of effort and perfection of form is measured.” (Forgus & Melamed, 1999, p .11) .

The behavioral approach considers the external elements that affect learning, so this can be measured according of the changes that can be observed directly.

Constructivism is concerned with the internal elements of learning: the cognitive processes involved in the acquisition of new knowledge. These processes are: selection, procurement, construction and integration of knowledge. Through selecting some data from a broad set of information, which is determined by student interests are apprehended. Thus, this information becomes part of the operative memory. (Piaget, 1950, Vigotsky, 1978)

The acquisition is a process of transferring information from operative memory to the cumulative memory, in which a permanent storage of the data in this way, will be available at the appropriate time, occurs .Through this construction process links between data of working memory are set to give them a coherent organization. The integration is based on the recovery of data located in cumulative memory, to relate the information in operative memory.

“The selection and acquisition processes determine how much (quantity) is learned while construction and integration are cognitive processes that determine the consistency of the organization of learning and how it is organized.” (Weinstein & Mayer, 1996, 317).

Efficiency in learning occurs when the student applies in quality and quantity these processes, as well as the capability to apply outside the classroom the knowledge gained.

Education focus in learning implies to emphasize planning and learning activities of students, with regard to the needs of society, such as the formation of responsible citizens or labor market characteristics. Therefore, the goal of education is to develop the students' potential to the fullest. To do this requires educational programs to have development standards and expectations established. It must be seen “as students learn trough different styles and at different rates.” (Millan, Rivera & Ramirez, 2002, p. 37). It is recommended that formative assessment is used, to measure learning from the beginning of the process and adapt to individual needs and learning styles. The summative assessment will measure progress according to the standards and key external norms.

1.5.4 System

In order to better understand what an education system is, it is necessary to define the term system, which can be defined as : “A totality organized or complex; a set or combination of things or parts forming a complex or unitary whole.” (Johnson, Kast & Rosenzweig, 1998, 113). The system refers to a set of elements that are integrated with each other, interact and have a relationship of interdependence. The properties of a system are different from the properties of the sum of the elements of the set.

The combination of interactions and organization of them constitutes a mechanism. Given their interdependence, in case of any change in either party, cause changes in the other, and in the entire system. If we consider that:

The *phenomena* should not only be studied through a reductionist approach . Also it can be viewed in its entirety. In other words, there are *phenomena* that can only be explained by taking into account everything that comprises and form part of them through their interaction. (Johansen, 1999, p.18).

According to It is difficult to determine the boundaries between the system and its context, given the existence of various interrelated systems. That means, the system and its context are interdependent. An example of this is the cosmos, composed of multiple systems, such as galaxies, which in turn are composed of subsystems, such as stellar and planetary systems. Thus, there are systems that are contained within others (Bertalanffy, 1992).

A system is defined depending on the angle from which it is analyzed. For example, according to the degree of autonomy it may have within the system in which it is included (super system), or the system or systems contained (sub-systems or sections). There is, therefore, a hierarchy of systems according to the complexity of the overall system.

This set of interacting parts is studied by the General Systems Theory, based on a theoretical level of constructing models, halfway between abstract and generalized constructions of pure mathematics and specific theories typical of specialized disciplines in a systematic body of theoretical constructs that serve as a basis for discussion, analysis and explanation of the

general relationships present in the empirical world. Among the major theoretical researchers of systems we count with Bertalanffy (1992), who notes:

The general systems theory does not pursue vague and superficial analogies. They have little value, as within similarities between *phenomena* differences are also provided. The isomorphism we discussed is more than mere analogy. It is a consequence of the fact that matching abstractions and conceptual models to different *phenomena* can be applied. Only the laws of systems were applied to look at such aspects. This is no different from standard procedure in science. (P. 36).

Systems identified in the general theory of Bertalanffy (1992), do not constitute a single application of abstractions, as they would be mathematics...

On the contrary, the concept of system poses problems that are still far from being resolved in part. Formerly system problems led to important mathematical developments such as the theory of Volterra about integro-differential equations, about systems with memory whose behavior depends not only on current conditions but also on the previous history. (P. 105)

The objectives of the General Systems Theory can be set at different levels. For example, to find similarities in the theoretical constructions of different disciplines, enabling the development of theoretical models applied in at least two fields of study. At a higher level, a system of systems may be developed, allowing building an integration of parts. Hence this trend is opposed to specialization. It is important to distinguish between the system and its environment. The environment is also a set of elements that influence the system elements, or they can be influenced by it, without the environment belonging to the same system. Systems can be open or closed. They are open on that relate to their environment. They are closed those that do not require bond with their environment to stay as systems.

In the sixties the theories of self-organization began to develop; referring to systems that can organize themselves to form their own structure and component parts. Due the fact of being self-referential, these are closed systems, which make implicit difference with the environment. The main representative of this theoretical approach was the sociologist Luhmann (2002), whom on his Introduction to systems theory, applied the systems theory to society.

The theoretical consideration of open systems is to some extent a theory of high generality, as it leaves open the question of what kind of terms of an exchanging relationship must occur between system and environment . Designing of open systems works with an indeterminate concept of environment and does not distinguish the general relationship between system and environment from the more specific relationship between system and system- in-the- environment. In the generality of this theory dependencies cannot be appreciated: for example, ecological dependencies or political system dependency with respect to the performance of the economy. (p. 59).

In terms of system, societies and institutions are interacting social systems, by being interdependent collective *phenomena*, which constructs, create and reproduce society and its different levels. A social program, like education is a system. Because it has a structure that is comprised of elements or actors that are organized and articulated according to activities, to create products that change or add value to the properties of some of its components, which may potentially be incorporated into other systems. Activities, resulting from the organization depend on the properties of the elements. Note that the constituent elements of society stand in a relationship. Therefore, the essential problems, policies and programs should be viewed as interdependent components of a system.

Education can be conceived as a social system. In other words is a set of collective *phenomena* that interacts among them. For this reason the concept of system is useful for understanding and analyzing education, from a holistic or total view , considering that the whole is greater than or different from the parts. In turn, the education system can be considered as a subsystem of public administration, either a subsystem of society or culture.

Moreover, it is a macro system that contains other subsystems, such as civil and the military education system, or the different levels of education (primary , secondary or tertiary education), or educational institutions , or administrative structures just to mention some.

1.5.4.1 Education system

We have seen that the concept of system is applicable to various *phenomena*, both natural and social, which implies cultural *phenomena*. By system is meant a set of elements that have a mutual integration in addition to interacting and being interdependent. Education can also be conceived as a system, especially with regards to its organization. As a system, education is integrated by interrelated components that make up a whole, which is more than each of the elements in it. Hence education is an organization conformed by a system of interdependent variables.

Differences exist in the form of organization and the types of educational systems, depending on the place or the time they occur (Clark, 1983). In modern days education is and institutionalized activity which needs to respond to the necessities of the environment. “The demands of knowledge and life along with a deeper understanding of educational issues and their relationship with society have been building the organization of the education system.” (Cayota, 1994, p.13).

In today's world, knowledge is organized into different fields and information is abundant. Hence there is the need to integrate knowledge into rational form so it can be used for research and educational purposes. The educational system responds to these needs, as it encourages the link between education and research, which enriches the educational system and the research process itself, facilitating expansion of knowledge towards society.

The education system can be divided into subsystems, depending on different variables like age cohort, level of intellectual development of the student, or may also refer to the requirements and characteristics of certain sectors of society. It should also be considered the simultaneous existence of several ways of thought and ideologies. The different variables are interrelated in the education system, whereas from this perspective, can be seen as a whole.

Considering the stages of development , the needs and interests of individuals and groups to educate, it is possible to plan an education for the long term " that may well measure and define the characteristics of learning , the coherence of their education plans and programs , It also can study the individual evolution and foster it during its development.” (Cayota, 1994, p.15)

From the institutional point of view, an education system is comprised of a set of distinct institutions devoted to formal education. The control of these institutions belongs to the State. Also integral parts of the education system are interrelated in various ways. In general, the elements of an education system are diverse; including organizations, activities, actors and relationships that keep all these elements together. Also an education system fulfills social functions of great importance, since its relations with society are not only complex but interrelated and constant.

1.5.5 Higher Education (tertiary education considerations)

It is important to consider the relationship between the education system and the production system, since the former affects productivity and generate wealth for society. In turn , investment in education should influence the production system and social welfare, as education in a context of a knowledge society requires higher levels of training and qualification on the part of citizens.

The term tertiary education has been broadly use to define higher education institutions. The World Bank provides us with a definition:

Tertiary education broadly refers to all post-secondary education, including but not limited to universities. Universities are clearly a key part of all tertiary systems, but the diverse and growing set of public and private tertiary institutions in every country— colleges, technical training institutes, community colleges, nursing schools, research laboratories, centers of excellence, distance learning centers, and many more—forms a network of institutions that support the production of the higher-order capacity necessary for development. (World Bank, 2010)

In developing societies such as the Mexican, where there is a low average level of education among the population (INEGI, 2010) exists a deficit in terms of the training and qualifications of the population, which negatively affects the production system.

The tertiary level of education referred as higher education should correspond to the characteristics of the globalized world and enhance knowledge transfer between universities and the productive world, for economic and social development. Therefore higher education institutions are expected to be consequent to the legal order, values and necessities of the society.

1.5.6 Military Education

In general military education is

a principles-based system , which is complemented by a set of ethical, moral , civic , social, cultural and political values, in order to develop skills, abilities, capacities and attitudes in those who conformed the Armed Forces so they can fulfilling its mission , creating a unique and special professionalization on the basis of national identity , respect for the constitutional order and the strengthening of democracy (SDNH,2006)

It is a process of improvement of individuals and its integration into society. In that sense, the military education pursues the same purpose as its civilian education counterpart, and uses the same tools, aimed at intellectually form individuals through instruction - and the introduction of habits or behaviors through training.

The teaching, in the military sense, refers to the set of theoretical and practical activities performed by military personnel, for its induction into the armed forces and to maintain optimum operating level in specific areas of each branch of the military activities.

The implementation of behaviors through training is geared to the need of the army that its members react controllably and uniformly deal with unforeseen situations whose characteristics prevent intellectual and thoughtful opinion.

Military education is the basis for the formation of the armed forces. Considering that:

In principle, the military is forged under the inspiration of a doctrine that leads to internalize the values of the institution, which represents more than a simplistic repetition of precepts, as is the belief in those values where lie the moral forces which the individual must hold in an activity that demands often to jeopardize the integrity of his person and life itself (Garduño, n. d., p. 3)

At the same time, military education develops through the discipline of its members, based on the ability to respond, organically, to the demands of military work. As an organic being, the discipline promotes unity of effort by sharing objectives in common by the members of an army. Discipline also refers to the unity of command, in terms of hierarchical structure deriving in orders, responsibilities and orders effects.

The peculiarities of each era affect military education. Thus, in the XXI century prevails modern technology application, which requires military readiness and to have specific qualifications for handling the weapons and equipment , which increasingly rely more on the use of specific technologies.

In the military forces co-exist two missions : education and leadership, which are intrinsic to each other. The teaching role in the armies is an activity that occurs constantly. Training is an important function within the military education, consisting of a system designed to implement habits through rigid procedures, so that the mechanization of certain behaviors is facilitated.

Therefore education and leadership in the military education can be understood thru the following reasoning:

Its application in the military obeys to the necessity, in some cases, to foment on its members uniformity and ensure prompt responses to unexpected situations whose characteristics do not allow for a thorough out consideration of such situations, deriving in a set of actions aimed at forming efficiency and effectiveness in carrying out individual acts or a set of acts by the troops. It is also defined as the action of military training , designed to optimize the performance of acts of military character previously thought”... and learned, ” where its purpose is to get prepared members of the Army in order to fulfill their missions.(Chan, 1997 , p. . 10)

One basic role of education in the armed forces is to provide the opportunity for upgrading and promotion of members of the army, from the level of the troops, to officers and commanders. To understand this, it is necessary to review the concept of army. Technology is one of the main factors that influence education, both in the civil and the military along with the economy and politics of a society. Military education must take into account such influences as they permeate and shape the way the organization and operation of military entities is.

One of the main purposes of the armed forces is to work towards safety of a society or a nation by defensive duties or, if applicable, through offensive measures. Achieving security entails peace construction. The culture of peace involves the joint participation of the military and civil society, as it happens in some parts of the world afflicted by armed conflicts where the United Nations is involved in efforts to implement peace.

Therefore since education is a basic tool to bring changes and innovations in the global strategic environment, in the military education should be taken into account in order to have a suitable model of professional military formation according to current necessities and context.

1.5.6.1 Army

The term army refers to an institution composed of all military forces, including air, land and sea , belonging to the State for defensive or offensive actions , usually aimed at protecting a territory, its inhabitants and institutions. Consequently, most countries have an army, with exceptions such as Costa Rica or Andorra. (globalsecurity.org)

The armies have existed alongside the first States, whose power was based on its military capability. Thus the army may be the support force and structure of a government.

As an institution, the army is based on a well defined vertical hierarchy structure. They rule themselves by codes of laws and regulations that govern all members.

At the bottom of the military hierarchy are the privates; depending on the career they do within the institution, its merits and even their studies can allowed them to be promoted to higher degrees and hierarchies.

An army is made up of different bodies or division, according to the existing needs, so there are specialties such as infantry, military engineers, and communication, among others, that coordinate together to carry out the work entrusted to the military.

The activities of an army depend on the internal or external policy of each country.

Another area of action of the armed forces is to protect civil society, in cases of natural disasters. As is the Mexican case it can also perform tasks of literacy of rural communities, health care, and housing reconstruction, among others. Hence we can say that, the work of army is not necessarily geared towards warfare.

1.6 Literature Review

In addition to the previous review, focused on the theoretical foundations, in this section a brief review of the literature in education used purposely for this research, where teaching concepts that apply to the discussion of military professional education are treated .

1.6.1 Pedagogy: background and classification

According to Colom (1982), pedagogy is conceived as a human science, based on the reflection of instruction and education. According to its history in the West, pedagogy concerned the education of noble - understood as a paradigm of human being - ; from the middle Ages until the advent of the Enlightenment. In this sense, its values are based on the Enlightenment itself, as a starting point of a mentality based on rationalism, optimism, religiosity based on reason, morality, utilitarianism and liberalism. Although not much emphasis on education as an autonomous branch of knowledge was made at the beginning of the Enlightenment, education was conceived as a contribution to other fields.

After the French Revolution, education was associated with politics and society in general, as noted by the writings of Jean Jacques Rousseau, who conceived education as a tool to transform the human being, in order to insert him into society; in other words this thinker understood education as tool for social reform.

Later, with the emergence of idealism, the historical dimension of human activity, which covered the areas of law, literature, folklore and economics, among others was emphasized. In addition they analyzed the human reality, understood as a spiritual evolution. Idealism assimilated pedagogy with philosophy, recognizing its relevant role into the human formation, beyond the scientific knowledge and in order to help human beings to understand his future.

Realism, in its way, considers the diversity of individuals and therefore the existence of different realities: that of nature itself, and that of the humans and things. For this current of thought pedagogy is developed as a theory of knowledge, understood as an intellectual apprehension of objects, giving it a scientific content related to psychology.

Later on, positivism takes the model study of the natural sciences to adapt it to the social sciences, of which sociology emerged as an integrative science of disciplines about the human. In positivism, psychology means a convergence between natural and human sciences. From these sciences, the positivist pedagogy is presented as a scientific pedagogy, fact that gave it a methodological basis , although distorted the role of values in education. In

positivism, pedagogy basically had three branches: biological, psychological and sociological. The three trends led to the so-called new school, which in our days has led to the experimental or scientific pedagogy, understood more as a method of educational research, than a formal theoretical current.

The pedagogy focuses on the scientific study of the object, the end and the means to achieve education, to be used to prepare the learner for insertion into the current social life. This requires taking into account the human reality, both individually and socially.

Social pedagogy is oriented to the social purposes of the individual, which is related to the political pedagogy, where the Marxist pedagogy has been one of the most notorious representatives, trying to guide the individual to his inclusion in the community, for the sake of common good.

Meanwhile, the lively pedagogy is plural, and seeks to study the natural reality objectively, in order to understand life. It should be noted that one of the main representatives of this pedagogy is Dilthey (1998), who understood that education lacks universal and permanent purposes, as it is conditioned by historical circumstances and even mood related behavior, to this author, cultural goods become educational goods.

Among pedagogic currents catholic pedagogy integrates life and culture, morality and the absolute matters. Their tendency is more social than of individual character.

Marxism also has a notion of pedagogy, in which this should be directed to dissolve class differences through access for all to intellectual culture, rigged to work as a teaching method.

Dewey (2009), as a positivist academic, integrates socialism and individualism to education in a democratic environment which leads to popular education. He retakes the vitalism, and categorized fundamental aspects of education, life, the person, freedom and experience within the social and psychological contexts, where experimentation would be used as a method. The pedagogy of Dewey provides guidance to the active education and is a basis for the so-called new school.

Currently the education technology - based in the application of new techniques into education - means a gap between the new methods and conceptual models, because although the methods are updated, the models tend to belong to the nineteenth-century pedagogy to a great extent.

Nowadays, general pedagogy and educational theory , refer to philosophical or positive-experimental models as the basis of a theoretical construct on education, taking into account the scientific movement . For the author (Dewey), it is important to demarcate epistemically pedagogy from philosophy, to provide the first of autonomy, which certainly has an impact on their development and actualization.

1.6.2 Curriculum Vs Hidden Curriculum

Education is a specific and complex reality. It can be understood as the process whose " true educational purpose [is that] the learner unfold his personality to the maximum within a rational community it serves and who serves him ." (Freinet , 1979 , p. 23). After identifying what is concrete is possible to make abstractions of reality, in this case the abstraction is the curriculum; this is a simple category and as such is a historical category.

In accordance with this, the curriculum is a cultural construction, considering that "is not about an abstract concept that has some kind of existence outside and prior to the human experience." (Sacristán, 1998, p. 14)

In this very same sense Lundgren (1981) argues that considering the curriculum "as something given or as an objective reality in stare of considering it as process in which we can make cross sections and see how it is configured in a given moment, would be nothing more but to legitimate without question the established option of curriculum, securing it as something undisputable" (p. 40).

Therefore, the curriculum has been defined in several different ways by educational trends that have emerged from multiple fields of education. For the purpose of this research Rule (1973) work was considered and according to him curriculum has two basic meanings: a) the curriculum is a tool for convey the experience, and b) the curriculum is the content and activities of education. In both definitions, it is possible to apply the concept of a military education curriculum, since it is a process of transmitting the experience where content and educational activities are transmitted.

The curriculum can be understood as : a) the body of knowledge that students must obtain in a cycle , level or type of education , b) the tasks and skills that the student must develop to achieve vocational and job training , c) is a program that provides content and values in order for the student to participate in social reconstruction.

Given that this research will seek to find the links between military education and society in which it is inserted, it is important to consider the social function of the curriculum.

Sacristán (1998) identified the criteria that researchers use to develop their definitions of curriculum, these criteria are: 1) social function , i.e. the relationship between school and society , 2) project or educational plan , 3) practical field 4) discursive activity . According to this author, the importance of the concept of curriculum is because it allows us to understand the educational practice and the social functions of the school.

Through the curriculum, social systems establish an education with specific social and cultural purposes, in this sense, “the curriculum is not an abstract reality independent from the education system where it was developed and designed.” (Sacristán, 1998, p. 16). The curriculum involves a position, an orientation, a classification and selection of content, is also a mean by which knowledge is socially distributed; hence, some researchers have been devoted to the study of the ideological aspect of the curriculum. For them, the curriculum is a place where the interests and strengths of the various groups in society are confronted.

The curriculum can be seen as a form of get in contact with the culture. To understand this statement, it is necessary to dwell on the consideration of the term culture. In the social sciences, the first definition recognized with a general validity was the evolutionary one,

according to which culture is social heritage; later functionalists and structuralists enriched this definition by stating that the social heritage is transmitted through education, and that each one of the elements that are part of the culture plays a role in society. They also divided culture into two main types: material culture or tangible and immaterial or intangible culture within which is education. From this perspective, the importance of the curriculum is seen as one of the means for transmitting the achievements of society from one generation to another. Thus for military education, curriculum is about the intergenerational transmission of achievements within the scope of the armed forces.

The curriculum can also be conceived as a *praxis* (Sacristán, 1998), i.e., the process by which they put into practice the principles on which education is based, is “a practice in which a dialogue is established (...) between social agents, technical elements, students reacting to teachers who model it, etc.” (p. 18). This definition of the curriculum takes into account the participation of the various levels and agents (society, administrators, students and teachers) in the educational activity.

According to Insko and Schopler (1980) the curriculum fulfills its functions through its contents, formats and practical actions. Its contents are of three types: cultural, intellectual and educational. The intellectual contents are the knowledge generated by empirical science , technology , social sciences , arts , etc. . Their formats are composed of pedagogic codes , and its cultural actions are the activities , tasks and rituals (e.g. ,civic ceremonies) through whom their contents and format are manifested.

The contents and formats are historical products , i.e. they are the result of specific political , social and educational conditions therefore contain values and " evaluative summaries of the different beliefs of a person about an object or concept (...), provisions to judge favorably or unfavorably the objects " . (Insko & Schopler, 1980, p .13).

Thus, the curriculum can be treated as a historical category, and although is a term that has evolved, it is possible to identify their basic characteristics :

- Is the expression of a society 's educational model .
- Meets cultural and social functions. The first consists in transmitting the cultural heritage of society and the latter to carry out the process of socialization within its own context.

-It has content, format and practical actions.

-Its content is established through a process of sorting and selection made by the ruling classes of their own context.

As can be seen, the curriculum is much more than a collection of materials that make up an educational program, the curriculum is also in an area where the contradictions of social groups that make up society are manifested.

Following a dialectical method , once the historical category *curriculum* (thesis) has been established, I will proceed to do the second abstraction from the concrete reality , which leads to the concept of *hidden curriculum* (antithesis) , as another element of concrete reality (education) , curriculum and the hidden curriculum are opposites, in the sense that they express different elements , i.e. the explicit and the implicit in education , but their opposition leads to the recognition that they are part of the same educational process (synthesis).

Research on the education system and everyday life of the school, is a controversial field due the lack of absolute unifying theories.

Specifically , research on the curriculum within the classroom, requires participatory methodologies , such as qualitative , used in line with wider margins of analysis , considering the interrelationships between education and other spheres of society , in order to capture the linkages between the explicit and hidden curriculum of the school , and the economic , cultural and political productions of a given society .

That is why the everyday aspects of school life should be considered, and specifically, in the classroom and learning environment, Hence the emphasis on the hidden curriculum has as purpose “to seek the social meaning and unanticipated effects of school experiences in which are involved the students and teachers themselves.” (Torres, 1992, p. 10). The hidden curriculum has a role of great importance to the configuration of meanings and values, of teachers, students, and later transmitted to society that in general is not aware.

Qualitative research, on par with adequate theoretical frameworks allows to analyze clearly what really happens inside educative institutions, to give a reinterpretation of what happens in these spaces and discover new opportunities to develop educational practices more consistent

with the social environment. The importance of researching and hidden curriculum lies in the discovery that may be made of the dimensions of it that are difficult to discern , despite being present and in practice in the educational activity .

Indeed, the educational systems are justified from two basic lines of argument. On the one hand, those who see education as the best way to correct defects due to the socioeconomic and cultural current model , this implies that the education system does not function in order to lead us to another model of society , i.e. , should not alter social, economic , cultural and political relations. On the other hand, there is a line of argument that says there is a leading role of educational institutions in transforming and changing models of society. In other words, is based in the idea that the education system should be conducted to change society.

From both points of view, it is clear that the education sector has a very close relationship with other areas of society. It is an interaction, which means that what happens in one area of society (such as education), affects to a greater or lesser extent other areas within the society system. Therefore, it is necessary to consider the educational policy, educational institutions, curriculum, and probable hidden curriculum from a perspective that transcends the narrow space of the classroom, since educational policy cannot be understood in isolation, i.e., outside the context of the social and historical framework in which it operates, and where it finds its meaning.

Indeed, the existing power relations in society, are extended into the educational system, both in terms of the interest that is seek to make prevail, and in terms of achieving legitimacy. At the same time the contradictions generated by the different types of social relations -such as labor and exchange, in cultural production and political debate affect these processes. All this factors are reflected in the educational context. Hence we can state that the hidden curriculum is probably present in any education system, including the military education. The factual powers of a modern state have the capacity to permeate social organizations and educative institutions due its great influence by product of the economic, social, political, and cultural dominance. Then we can say that the purpose of a hidden curriculum in general is to indirectly steer the education process and its outcomes in order to achieve a different goal from the goals originally express or intended by the constitutive regulations of the educative institution. The hidden curriculum can be present with or without the awareness of its

members. Although curriculum by it-self does not necessary represent the beliefs and values of the students or the academic staff. It certainly represents at first glance the values of an institution. In the case of the armed forces as institution it represents a core part of the modern state. Hence the relevance of tracking and studying hidden curricula in the armed forces education system is always justified

1.6.3 Pedagogy , Control and Identity

In *Pedagogy , symbolic control and identity* , Bernstein (1994) develops the concepts of classification , framing , pedagogic device , models of performance and competency , field position , and secularization of knowledge . In the introduction of his work, it is well defined the classification and framing as coding principles, but these principles have different functions in the theory and research. In theory, the classification has the function of converting the power relations in specialized discourses, while the framing has the task of transforming the principles of control in pedagogical relationships. In the investigation, both the classification and framing are used as the means to identify and describe classroom practices and curricula. The pedagogic device is a concept developed by Bernstein. This concept is important because it "allowed the integration of macro levels of analysis to institutional and interactive levels." (Bernstein, 1994, p.21) The models of performance and competency try to explain these *phenomena* , initially studied by linguistics, performance is the use of the ability to communicate and competency is about the correct use of this capacity in a given context. The position on the field is set on three levels of analysis, these are the author, actor and identity. Finally, the secularization of knowledge refers to the separation between knowledge and *subject* of knowledge as a result of not taking into account the commitment of the latter. (Bernstein, 1994).

Regarding the relationship between theory and empirical research, the author argues that the theory provides models shaped by principles of description and interpretation for the study of research problems.

Referring to the link between education and democracy, Bernstein (1994) concludes that education is a public institution depository of knowledge in society; however, it also

replicates social injustices. Moreover, the biases of the form, content and access may weaken the affirmation, motivation and imagination of society. These biases of the form are part of the structure of the processes of transmission and acquisition of education system.

The Bernstein (1994) presents three pedagogical rights : strengthening the individual , inclusion and participation. The right of the individual to the strengthening is to create the conditions for people to have the experience to overcome the social, intellectual and individual limitations , this experience allows people to have confidence in themselves. The right to reinforcement, need trust and acts on the individual level. The right to inclusion concerns to be taken into account socially, intellectually , culturally and as a person without losing independence. The right to inclusion needs the community and it operates at the social level. The right to participation is the prerogative to intervene in the mechanisms to build, maintain and change the order. The right to participate requires the political discourse and develops at the political level.

However, these rights are not exercised equitably in educative institutions, because in it there are differences in how ideology, knowledge, resources, and access are distributed . Ideology is the set of values that the ruling class imposes on other classes; in school this set of values is projected through visual and temporal images. Knowledge is delivered according to a distributive principle where the known plays the role of transmitter of a specific value, and power and a different potentiality according to every social group to whom it is targeted. The resources are distributed according to the position in the hierarchy of values and knowledge, and those at the top of this hierarchy have more resources than those found in the base. Other factors influencing the educational –pedagogic- rights are access and knowledge acquisition; The access in education is restricted when the education system faces its own limitations of short medium and long term coordination. i.e. does not have a pre-school system, does not have the necessary number of schools of different levels, and does not have enough supporting bodies, on the other hand, the acquisition of knowledge requires teachers with specific characteristics such as engaged, motivated , responsive , and well-paid along with an appropriate context for achieving an education where reflection on knowledge and how knowledge was acquired is in constant practice.

Therefore in educative institutions there is a hierarchy of values, knowledge and resources, which corresponds to the hierarchy of class and power in society. However, Bernstein remarks that the school tries to deny this hierarchy through a " *mythological discourse*", the objective of it is to create horizontal solidarity between groups of students and teachers to "contain and improve vertical divisions -hierarchical - between social groups " (Bernstein , 1994 , p.27) The horizontal solidarities are based on what they share as social groups , i.e. their identity. The "*mythological discourse*" seeks to produce a national awareness and integration and decouple the hierarchy of the school from the hierarchy of society. National consciousness is developed from the origins, achievements and destination of society. National consciousness produces horizontal solidarity, which in turn creates specific cultural identities using mechanisms such practices, rituals, celebrations, school emblems as well as the language, literature and history. National integration is based on the idea that society is an organism in which different social groups have a role with the same value; therefore all social groups depend on each other. Moreover, to separate the school hierarchy of the social hierarchy, the school justifies its hierarchy or scale of success and failure by underscoring the innate characteristics -cognitive and affective- of students by remarking the deficiency of cultural baggage passed by the family to the students. In other words education system classifies its member's through a set of institutionalized assessment, rewards and punishment based theoretically on academic performance.

Based on the above, the just before mentioned author concludes that social class is the main regulator of the distribution of students in education. This position is relevant to address the issue at hand, the military higher education, as it is important to consider the social context of learners that are being formed in the educational system of the armed forces.

2. Methodology

The research methodology is a body of basic knowledge, where research methods are a tool for the development of knowledge. Therefore it should be stable, conventional and based on certain criteria, for communicating knowledge across disciplines and contexts. The methodology, therefore, favors the progress of the various fields of knowledge through exchange, consensus, and multidisciplinary character.

Being this a scientific research, the resulting outcome will be a know-how that enables the production of new ideas and debate about theoretical models which may have an empiric usage favorable for understanding of reality as well as identifying and solving specific problems.

Therefore, the methodological model chosen for this research should focus on a certain reality, in this case, the field of knowledge of military higher education in the cultural, social, economic and political context of Mexico. The method will guide the research in their approach to reality, and provides scientific criteria to monitor the process in order to produce an objective view of the subject. Based on this, the outcome expected will be a reflection supported on the theoretical and empirical evidence obtained through data collection process stage of research. This will enable an analysis of the phenomenon of military education in Mexico, in its various forms, to discover its components and their relationship with social reality.

The theoretical evidence shall be obtained from specialized literature and from the link between reality –empirical knowledge- and theory as well; in order to allow the construction and proposal of a valid framework of reference useful for the understanding of the *phenomena*, its context and its relationship with other *phenomena*.

Based on the theoretical and conceptual framework derived from documentary research, and its relationship to the reality of the matter to be investigated; a task of interpretation, that

sheds new elements, will be conducted in order to achieve knowledge which may be formulated as new contributions for the better understanding of education in Mexico in general, and the military higher education in particular.

It is necessary to focus and contextualize this research into its own reality, because “It is essential that the reflective exercise of interpretation is supported by reasoning and argument rather than mere intuition , since research and knowledge advance to the extent that the ideas are reviewed to improve their potential of representation of reality .” (Saravia, 2009, p. 4-5).

Once the reality to be investigated has been defined, it is possible to outline the research and implementation of the methodology, with clarity and precision , in order to link such reality with theoretical perspectives from which the work and the method itself are to be undertaken in conjunction with the fundamental knowledge of the subject and structure of the process.

Therefore, the proposed methodology for our research is of documentary character and aimed at the study of a social system, where prevails certain specific cultural, organizational and educational models, such as civil and military ones. These models are frameworks that will delimit the spectrum of our research. Here, we start from the premise that “Cultural models (...) are flexible and malleable entities that become the object of study.” (Hernandez, et. Al., 2003, p. 11). The cultural - and - educational model to study is the military and the relationship with its context, which is that of society and education in Mexico from a national level perspective.

The available literature on the subject is scarce, and if it exists, it is of difficult or restricted access due the sensitive nature of the studied matter; and in areas such as the integration of military instruction and training in the field of formal professional education, with regard to the contents to be taught and delivery methods, allocation of resources, performance of academic and administrative staff, academic output, quality assurance among other.

Since the purpose of this research is to describe a situation: how military higher education exists and its conformed and how it can affects the development of society; the methodology used is descriptive, as it is intended to elucidate the specific and unique characteristics and

properties of the *phenomena*. Therefore, data on various aspects, dimensions and components of the situation to be investigated were collected, because “ (...) in a descriptive study a number of issues are selected and from them information is measured or collected, so (...) we can describe what is being investigated.” (Hernandez, et al., 2003, p. 118). Hence our purpose is to gather information on the concepts covered by the research, so the resulting data from them is integrated to express how they are constituted and how the phenomenon manifests.

In other words, information about the military and its relationship with the state and society are reviewed; the role of military education in the context of education in Mexico and its impact at social level specifically.

A document of special interest is the LEMAFAM by its abbreviation in Spanish (Mexican Army and Air Force Military Education Law), according to the first article of law, “(...) the purpose of this law is to regulate the education offered by the Department of National Defense. It shall be oriented to knowledge, application of science and military arts, as well as other related to the needs of the Mexican Army and Air Force.” (LEMEFAM, 2005, Art. 1). Given the regulatory nature of military educational practice, a content analysis will be performed to locate the most relevant aspects of this system of education, such as ideology and hegemonic relations involved; educational policy to which is attached; construction of a particular cultural identity of learners; manifest and hidden curriculum; and the present system of military education values, among other things that the analysis might reveal.

It is important to consider that the military education system is part of the national education system as a whole that integrates teaching and administrative functions and structures, corresponding to certain national policies and organizational scope, with respect to the armed forces, understood as an organization. Similarly, it should be taken into account the interests and objectives of the military, which seeks to develop the physical, moral and intellectual capacities of its members, through educational processes based on the values of the state and of those institutionally exclusively of the armed forces.

A prominent classical feature within the military education is physical education, which is closely related to the training of members of the armed forces, who must have adequate physical preparation to keep them in optimum health and strength to carry out their own work

of military life . In the same vein, it is important to consider the military moral education, which aims to inculcate certain values and develop in people a feeling of belongingness to the army. Hence this study will take into account not only higher education in the military but also what is called military professional education and military professional training.

2.1 Ideology and Military Education

The educational matter can be approached from the point of view of ideology, in order to find its correspondence with certain ideological positions, which in turn, are transmitted through education systems, such as is the military education one. In this regard, we understand that education is based on its social organization as well as on cultural transmission, knowledge, attitudes and forms of behavior. Considering that:

In complex societies such as ours, where there is a labour , technical and social division. Mechanisms are needed for transmitting knowledge and legitimacy to respond to the complicated organization on which they rest. Educational systems largely fulfill these needs. They are basic elements for reproduction of society to the extent that they convey a certain values and beliefs, some knowledge, some concepts, some ideas, some ways to represent, interpret and understand reality. And this is done by certain ways, with specific forms of organization involving both the classification and management of individuals who are intrinsically under its rule. Ultimately, education systems, including non-formal education, fulfill in an explicit and implicit way, specific functions that contribute to reproduction of the social system to which they belong. (Petrus, 1995, p. 9)

Thus, an educational system is the product of social organization and corresponds to the basis of this, as it seeks the reproduction of it. To identify the ideology to which corresponds the military education system, we will investigate the following:

- a) The underlying ideological approaches to the current military education system.
- b) The functions of the military education system in the social system context and contribution of military education for the legitimacy and justification of the social system.
And...
- c) The Role of the military education system in the production, reproduction and dissemination of the ideological foundations.

2.2 Curriculum and Education programmes

To institutionalize and formalize an educational system attached to the national system of education, it is necessary to differentiate between the knowledge available in society, the knowledge historically accumulated and the knowledge that will be part of the educational programmes. The curriculum is an organizational element “carrier and distributor of social priorities, designating and excluding to what provides meaning in the classroom (...)” (Di Franco and Siderac, 2006, p. 82). Also, the curriculum refers to the body of knowledge transmitted at school, and linked to both, teaching method and to the logic of production and development of the curriculum of which it is part.

School programs are subject to change, conditioned by the time and the body of knowledge officially considered valid. “In every historical moment certain things are thought and not others; certain elements of knowledge or certain issues within certain fields are emphasized. Could not be said that there is an automatic adjustment between what happens in society and what is taught in schools. (...) This means that certain cultural content, once they have been institutionalized, and have gained a place in the official program of the school; tend to remain beyond the social conditions that justified originally their inclusion.” (Tenti, 2010, p. 28).

From this point of view, cultural contents are arbitrary and relative, while institutionalized by certain cultural forms. Given that school programs are one way to establish these cultural forms, we will investigate about military education in Mexico, to identify pedagogical and political-ideological levels:

- a) What contents are highlighted in educational programs?
- b) Are these contents modified or amended over time?
- c) What criteria define the curriculum?
- d) How is the relationship between the military education program and the construction of national identity, the legitimacy of the political system and social integration?

In this regard we must consider that “Identity is a complex and contradictory ownership of the image that makes a subject himself in relation to the cultural environment in which it is. During this process of identity construction, school education has an undisputed relevance.” (Di Franco, et. Al., 2006, p. 84).

2.3 Systemic Approach to Military Education

Another methodology aspect to take into account in an analysis of military education is to consider it in terms of the systems theory, which forms part of the theoretical corpus of this research and will be helpful to focus on education, understood as social *phenomena*. In the previous chapter we have seen that a system is comprised of a structure of elements, which are organized. These elements build the structure and its properties allow organizing the system and its interaction with other elements or systems. The studies made by Vega (1998), reveal that...

A project and / or social program is a system and has a structure which is mainly composed of natural and / or institutional actors (elements) that are articulated around

activities (organization) to produce outputs (achievements/goals) that solve (produce change or add value) to modify the properties of some of its actors. These actors may be incorporated into other systems. The system project and/or program allow these actors to have greater ability to coordinate actions. Therefore, the activities (organization) are based on the function of properties that elements have and on those intended to be achieved by some of them. (p. 152)

From this point of view, education provided by the military can be understood as a system situated within a system (the military) whose objective is to produce an educational and academic change in students (human elements) , for subsequent incorporation into the military system or other social systems . Therefore, from systems theory the interaction of the military education system within the integrated elements and their interactions with external systems can be evaluated.

The concept of the disturbance is of relevance, which let us registered the changes that happen in the organization of the system, when the expected properties of the elements are not met. (Vega, 1998). Alterations may have an external origin and affect the internal properties and the structure of the system. In the case of military education, disruption may occur if there is insufficient coordination for elements to interact according to their properties.

At the same time, the properties of the actors can be ill-defined in the design of a project or program, indicating a deficiency in diagnosis. The mechanism is the set of interactions of the elements of a system and the organization of such interactions, so the effect of interactions depends on relationships with other elements or systems (Vega, 1998). In this sense, a program or project, as is the education provided by the military in Mexico, can be understood as a mechanism that causes a social action. Therefore, the mechanism can be evaluated from:

- a) Its structure and organization;
- b) Structural determinism derived from the implementation generated by a social action.

c) Evaluation of system products, based on the attributes of its elements and their organization.

This allows a glimpse of the results of the system production, along the changes taken by the elements properties following the social action.

On this research in order to apply the method derived from systems theory we are guided by the following premises:

- a) the objectives of the military education system will be defined.
- b) its interaction with subsystems and areas that constitutes this sector shall be considered;
- c) the intervention of the human element in the academic, administrative and military aspects will be taken into account.
- d) and in a next stage, the elements that structure each subsystem and the attributes of these elements will be identified. This will allow us to register the properties of each element, and those that share between two or more elements.

2.4 Educative Competence

The notion of educational competence has two approaches: “A functional or <<external >> that has to do with the successful resolution of tasks, individual, social demands, and other structural or <<internal>>, that has to do with mind activity to integrate and bring into play different elements and resources (skills, knowledge, motivation, emotions, values, attitudes ...) enabling to meet the demands.” (Montero, 2008, p. 35). The issues highlighted in the analysis of educational competencies are: knowing, doing and wanting. If...

The concept [of educational skills] refers to the idea of meaningful learning, where the notion of competence has multiple meanings (capacity, expressed as knowledge, skills and attitudes required to perform a task intelligently, in a real environment or in another context), all of which have four characteristics in common: competence takes

into account the context , as it is the result of an integration process , and it is associated with execution and performance criteria which involves responsibility. (UNESCO, 2009, p. 7-8)

The competencies allow us to link the educational sphere to labor, from an educational and organizational view. By analyzing competencies, in an individual knowledge, talent or ability and his attitudes toward himself or against the other and to the working world can be detected. The competencies allow effectively determining if the educational process trains professionals effectively, so they can deal with the environment in which they will act, in both technical aspects and the ability to adapt to a constantly changing reality, so that the knowledge, attitudes and behaviors can be expressed as results and achievements. (Salazar and Chiang, 2007).

The notion of technological competence is based on the relationship of the learner with technology or technological competence, defined “as a finite set of cognitive rules that allow us to make infinite actions and to perform successfully in an environment mediated by artifacts and cultural tools.” (Gonzalez, 1999, p. 157). Such provisions are triggered by a constant relationship with the technological context, related to the social space and the ability of individuals to apply them in different situations.

In the occupational setting, the performance of military education graduates regarding specific tasks may indicate the result of behavior and professional performance. Under this aspect, is the package of learning, the instructional materials specific to each task to be performed and consistent guidance that will follow students throughout the learning process in order to achieve the required domain for a determined task. (Salazar and Chiang, 2007). Based on the learning of these instructions, competencies are intended to constitute a model to help solve the problems that the learner will face, relying on experience, practice and learning.

It is difficult, however, to reproduce all situations of a work environment that the learner may

face, especially when it comes to the military. Hence the need for experience in the real work context to produce the behaviors necessary for the army understood as an organization that has objectives to pursue.

Competencies help identify variables that allows us to some extent to predict job performance. “The distinctive feature of the concept and its methodology involves addressing the difficulties of the people in a specific moment to achieve the goals that have been proposed.” (Salazar and Chiang, 2007, p. 25).

To predict the efficiency of the performance of an individual , it is important to consider the relationship it may have with the reality he will face in the labor arena, since the mere consideration of the educational scheme does not allow the prediction of job performance “(...) it is not possible to predict how efficient the performance of a professional will be by the number of diplomas he may have, nor grades earned in college or formal education programs that he went thru . Academic achievements do not constitute a valid measuring stick to measure the potential at work” (Salazar and Chiang, 2007, pp. 28-29).

The academic side of education, which provides information and develops in students a disciplined method of thinking about the problems of reality in which they will perform; must be balanced and complemented by the situations described by the profession activities, to integrate theoretical training with an operating behavior capable to identify problems and opportunities, proceed to action and continue until the proposed results are achieved.

The theme refers to the military education system ,whom as a system , is a set of components that integrates functions, administrative structures teachers and learners, in order to comply with the policies and actions of the educational process of the members of the armed forces of Mexico, in accordance with the methodological, legal and theoretical conditions that occur in the educational field in general, and specifically in the military, to strengthen the capacities, skills and dedication of members of the army.

From the methodological point of view, we must start from the idea that competencies are associated with the development and understanding of the processes that allow the experience

to be formative, and identify the most useful experiences for the development of certain competencies related to professional environment. It is useful to question what makes a professional performs their job correctly and efficiently? In general, behaviors reflect the skills needed by students to succeed professionally in the armed forces. Therefore, the skills are integrated of intention, action and results.

The application of the method to identify the competencies will be based on :

- a) The Identification of institutional needs or strategic objectives.
- b) The identification of the objectives of the institution, the factors that favor or hinder the learning process.
- c) Review of documents of the institution statutes , legal foundation and study plan.
- d) information about the contribution of military higher education to national education , in terms of number of students, number of graduates and insertion of these as military and civilian workforce.
- e) Competencies and necessary professional skills for the development of a profession applied to the military.
- f) Selection Process and classification of applicants (cognitive and personality aspects) , depending on the training and military education.
- g) Teacher training
- h) Gender aspects and dropouts

2.5 Methodological Overview

The study is descriptive on its methodological approach because it focuses on the collection of data relevant to the *phenomena* to investigate, ranging from the definition of the subject, which has been established in the previous chapter, to more complex elements of it. As this research is of basic nature, it is to be considering that - in the course of the investigation - sub topics and situations can emerge, making necessary to collect and include further data.

We seek to make a profound description of the topic and its links with its frame of reference, to establish theoretical predictions over time, based on recent trends in higher education

organizations and resembling of those of military higher education, although related to the civil education and other social aspects. As well we seek to find the relationships that the proposed topic have with others, such as educational work, the application of educational technologies, or the prevailing social and educational policies in our country, in the present times. In this regard, it is important to consider educational models adopted by the military system in Mexico, for the formation of his elements. It should also be taken into account the relationships of the military system with other systems, such as political and economic, both nationally and internationally, in a global and regional context.

It is to be considered that the military education system focuses on the moral, intellectual, psychological and physical aspects needed to lead, instruct and teach to develop military personnel in a team work that also should consider the use of technology. Therefore, military education develops competencies in combat, in their different skills including military physical training, discipline, exercise of command and leadership.

Therefore, military education is based on the constant development of physical and psychic abilities of the members of the armed forces, through an educational process based on ethical, moral, cultural and intellectual values of the State, which is linked to the issue of human rights, among others. In terms of organization, military education is based on a technical-administrative structure.

As to the nature of the investigated sources, the methodology is bibliographic and hemerographic as we research on the role and functions of military education in the educational and social context of Mexico. Therefore, written sources (books, magazines, online documents, etc.) are consulted in order to collect and analyze data. Because this research does not require sophisticated numerical measurements, formally quantitative methodology was not followed, as any surveys or other studies using standardized measuring instruments are to be collected, although it may be factual that some numerical information found during the used research process to be used.

Due to the need for updated information, we also use online research from the *world wide web*, since this medium can facilitate the access to recent statistical information, pages of government institutions, electronic versions of journals, among other data relevant and up to

date on the subject at hand. It is in the data collection stage, where the gathering of data required for the research has been done. Documentary information was drawn from the pool of basic documents. Once the sources were determined they were reviewed by explorative and selective reading at the beginning, in order to determine the usefulness of the source and , if necessary , initiate the classification of texts in function of the structure of the research.

Based on this classification, an analytical and critical reading which allows determining and distinguishing the essential information, delving into the data selection was performed. After selecting information from the various sources, data was ordered according to the topics required by the investigation, with the help of a database consisting of worksheets, in electronic format, with data sources. The data records contain bibliographic identification of the source; their subject identification (relative to the research theme in the contents) and a textual body, with the obtained information. Subsequently, this information was processed - pooling the data collected on the same subject, and doing the same for each of them - in order to form a coherent whole , divided into the chapters that constitute the current research .

In another tenor, the hypothetical-deductive method is applied considering theoretical aspects to suit the particularities involved in military education in Mexico. Consequently, the inductive method is also used, from the particular matter and up to the general principles that constitute it. The use of the analytical method was necessary to review in detail the different elements that integrate the military education system. The historical method was also used to collect information on the background of the topic at global and local level and thus to set the course of history of military education in Mexico, an issue that is tied with the history of the armed forces in this country.

By using the methods described, it is intended to achieve a comprehensive and coherent view of the subject matter; As we covered not only the aspects that are purely educational, but also the social and historical aspects as well as specific modalities in the military education in Mexico, such as the physical and tactical training received by members of the armed forces, in addition to formal education that trains professionals to integrate the military sector.

Once information from different sources was selected, a database is built so that it will serve to organize the information as it is required according to topics and in order to establish the frame of reference. In order to achieve this we link together, the main topic with its own

background, concepts, theories and specific situations. This allows us to delimit the topic and to highlight the most important aspects in relation to the phenomenon to investigate. Subsequently, the information obtained is processed to form a coherent whole, divided into chapters that make up the projected research.

As a preliminary result of this academic effort, so far we have presented the overall structure of the research process, the foundations of the subject, the theoretical framework, the methodological framework, in subsequent chapters a summary of the empirical findings and their interpretation based on theory are presented. Finally, as part of the findings, the researcher reasoning and reflection are integrated. The resulting text was prepared with appropriate academic language and at the same time easy to understand. It focuses on specific aspects of the topic in a systematic and as rigorous as possible.

More over once defined the referential framework, we proceeded to structure the conceptual and theoretical framework, based on the theories that underpin the research in order to sketch ideas on the elements associated with the studied matter. The relationship between different ideas or variables are presented as hypothesis, and in the course of the investigation it is determined whether, in fact, are to be develop or are irrelevant to the case. Establishing frameworks facilitate to specify the object of study and related elements.

In sum, by the method described, based on research and data collection from academic literature and electronic documents, a data set is to be obtained for analysis and after is to be distributed according to the scheme of work to generate a an academic text which allows us to determine findings and conclusions.

3 State and Army

The state is a social *phenomena* that is constantly changing and redefined, from the simplest forms of social organization to complex societies. Therefore, the state as a form of social organization is a historical product or by product which has acquired different forms throughout the existence of the human being, from antiquity through the Middle Ages up to the nation state , which is the current form of state organization . The development of the state is part of the development of mankind itself and its forms of organization, production and culture in general.

The concept of state can be defined from different points of view, especially from the legal, political or social, as the state itself permeates all these dimensions. Basically the notion of state refers to a form of social organization, which has sovereignty and coercive capacity, is made up of various institutions and has the ability to regulate the life of a nation within a certain territory over which it has sovereignty. In turn, the notions of, territory, power, society, rule, and nation are constituent elements of the State.

From a sociological point of view, Max Weber considered the state as a political institution whose activity is ongoing and seeks to legitimize the monopoly of coercion to maintain the existing order. The state action is politically oriented as seeking to influence the distribution of government powers. Thus, the State is an institutional unit located within a territory , which monopolizes and legitimizes the use of force , through institutions such as the army, police , the legal system and public administration , to exercise functions of government , defense, justice, security and relations with other states. That means that, the hegemony exercised by the State is by law, a legal rule, whose main categories are:

1. A continued exercise of functions subject to law, within
2. a competency, which means :
 - a) a scope of duties and services objectively limited under a distribution of functions.
 - b) with the attribution of powers necessary for its materialization, and

c) a strict concentration of coercive means eventually admissible and the circumstances required previous to its implementation. An activity established of such a kind is called “judicatur” or “authority.” (Weber, 1996, p. 174)

As a result of the development of the concept of state, there is the concept of " rule of law " , based on the state function of law enforcement , and how it is organized for this, through the division of powers (executive , legislative and judicial) , and the definition of other functions of the State, such as ensuring security, printing money or defining educational policies , among others, which may vary from one to another State.

Herman Heller (1991) states that the primary function of the State is social,, through objective social action. “The role of State therefore consists in the organization and autonomous activation of the social - territorial cooperation, based on the historical necessity of a common *status vivendi* that harmonize all the oppositions of interest within a geographical area (...). “(Heller, 1991, p. 221). From this function derive other, as it is ensuring safety through the monopoly of coercive force.

This function is performed through institutions such as the police or armed forces. Thus, the army is linked with the state on the one hand , by being an integral part of this . On the other hand , it is constituted as an element of power through the ability to exercise violence , because of its military capabilities designed to support the security of the State itself . Thus, the State uses its armed forces to coerce in defensive or offensive manner, either outward or inward of the territory governed by the rule of the Sate.

Indeed, the Army is a constituent part of the State, “(...) Because it nourishes their ranks by means of the population whom is an integral element of the state itself ; the army places his normal jurisdiction area within a territory that is bound to guard , but the most important feature is that it strengthens the conjunction of elements with power.”(Saucedo, 2002, p. 66). The military is a power factor that supports the state through the possibility of coercion, through the exercise of power or material force.

In its etymology, the term "army" comes from the Latin *exercito, exercitus*, meaning army or troops. In turn, this word comes from *exercitium*: . . . "exercise, practice; military exercise" (VOX, 2011, p 22) Therefore, in the origin of the word army there is the exercise of an activity. The army concept - also referred to as "armed forces" - is linked to the State, by being one of its main institutions, being the guarantor of order, security and the very existence of the state. The efficiency of the army is determined by military power in its possession and disposal, which will serve to ensure the external and internal security of the state through the defense.

Since the army is nourished by the people -citizens - for the integration of its cadres; the army is popular and national and therefore part of society. While the army makes use of economic, technical and military resources, the main element is the human, organized, trained and provided with values. The state of duty and engagement of the army, obeys to the decision taken by civil bodies of state power, in the case of countries governed by the civil order, creating a link between the political and military spheres.

Antonio Saucedo defines as army: "(...) an armed institution protects the security of the nation, both internationally and nationally and performs social services during public calamities , to satisfy basic needs of the civilian population , performing any activity that is beneficial for the country" (Saucedo, 2002 , p. 74).

In other words as an armed institute has professional features , its objective is to protect the internal and external security of the nation, which includes assistance to civilians in cases where this is necessary , as the example of natural disasters or as local security forces. In doing so, the role of the armed forces as guarantors of national security is met.

In Mexico the armed forces consist of three institutions : the Army, the Air Force (both integrated into the Department of National Defense) and the Mexican Navy (as element of the Ministry of Navy) .

3.1 Organization

From a sociological point of view , an organization is a set of interrelated activities, between two or more humans who interact to achieve a common goal. This makes necessary to operate through a structure of functions and roles, and a division of labor . Therefore, the organization is a collective entity , although its existence is to a certain extent , independent of the individual members , since the organization can survive beyond them over time . In this sense, the military is an organization, since it is divided into parts corresponding to different tasks, always aimed to attend the state security . Therefore, armed forces involve a form of organization created to coordinate the activities of the various members of the military areas, so those, as a whole, can effectively fulfill the intended purpose. Thus, from an administrative point of view, the military is an organization.

3.1.1 Organizational theories

With regard to the form of existence of the organizations, there is no agreement between the positions of the various authors , from considering that organizations exist only in the minds of actors involved, to identify the reality of organizations based on their “ability to influence the behavior of its members” (Clegg and Dunkerly, 1980, p. 191) The organizations do not depend on any particular person , since its duration may be longer than the life of a human being. Furthermore, its collective nature assumes the sum of the individualities of which is integrated.

There are different types of organizations, according to basic perspectives: as the classical and modern theory. Max Weber distinguished corporate group, among other forms of organization. This group involves a social relationship, either a closed or limiting by restricting the admission of strangers by implementing regulations – which is the legal domination – while supported by the action of specific individuals (i.e. a head and an administrative group) .

The purest type of legal rule is that which is exercised through a bureaucratic administrative structure. Where only the leader of the association holds its position of

ruling, either by ownership, either by election or appointment of his predecessor. Nevertheless its faculties of command are also legal "competencies".(Weber, 1996, p.175)

The organizations involve social relationships and interaction of individuals , which is not random due to the limitations involved in the fact that certain groups of the population is to be admitted and others to be excluded. The order within them concerns to the hierarchy of authority and division of labor. The organizations can transcend the existence of its members, since they have a purpose and are designed to achieve it.

3.1.2 Organization and structured bureaucracy

Max Weber, is part of structuralist school. It considered essential the balance between the resources of the organization, both in its structure and human resources, the correspondence between formal and informal organization , and between personal goals and social and material incentives . Structuralism allows us to approach problems related to organizations and its causes, particularly in relation to authority and communication which are consider common elements between institutions or organizations, besides the behavior and structure of formalization.

The Weberian model is formal and rigid , in determining a society because of positions and not due individuals , so that the relationships between these are formal. The model does not take into account the behavior of individuals. For this author, the authority - of which we will abound in a later section- , tends to be formalized in the form of legal norms where the social , political and economic coexistence is based. Thus, the authorities integrate the organizational structure. This circumstance is applicable to the organization of the armed forces, in which the authority has a key role in decision making .

The pure bureaucratic administration , i.e. , monocratic-bureaucratic administration, dependent on files is under the whole of experience a more rational way of exercised domination , and it is in the following respects: precision, continuity , discipline, rigor

and confidence. Therefore calculability can be achieved, for the sovereign and stakeholders; the intensity and extension of service; A universal formal applicability to all sorts of tasks, and technical susceptibility of perfection in order to achieve optimal results. The development of "modern " forms of associations in all sort of fields (state , church , army , party, economic exploitation , association of stakeholders, unions , foundations and any others that could be cited) fully coincides with the development and growing increase of bureaucratic administration : its appearance is, for example , the germ of the modern Western state. (...) All of our daily lives are woven into this framework. For if the bureaucratic administration is in general- *caeteris paribus*- the most rational from a technical and formal perspective; nowadays, is also simply inseparable from the needs of mass administration (personal or property)” (Weber , 1996 , p . 178).

Weber’s perspective regarding organizations is sociological, being based on ideal models of behavior, which allowed him to develop a bureaucratic model. Hence the bureaucracy is one of the fundamental concepts in his analysis of the capitalist and socialist societies of his time. For him, bureaucracy is the only possible way to maximize the efficiency and performance of organizations.

According to Weber, bureaucratization allows human freedom to perform entirely, by avoiding abuse by those who have greater power. Moreover, the decision of what is best for all, comes from the legally established authority. The process of bureaucratization allows to adopt efficient methods and to have an objective selection of personnel, by the formal hierarchy. Additionally, members of the organization sharply separate their personal lives from their work activity. Overall, Weber conceives of bureaucratization as a form of rationality in action, which allows rapid decision-making due to the knowledge that every individual has on their tasks and how to perform them.

Given this, Max Weber defined the organization as a rational set, especially the bureaucratic model, which was conceived as an ideal. Thus, in his analysis of bureaucracy, Weber favors formal relationships within organizations, since for him “more bureaucratic an organization is the more fixed and detailed tasks are . Weber has little to say on informal connections and

relationships of the small groups that exist in all organizations. In bureaucracies, informal ways of doing things are often the main means by which flexibility is achieved.”(Giddens, 1993, p. 310)

In this sense , the army has a bureaucratic model in their organization , albeit different from other bodies belonging to the state, in view of the army nature of violence holder , to ensure state security . The authority within the armed forces is of rational-legal character , as those who have it do it based on the principle of legality , which in turn , norm the forms of coexistence within this sector. The urgency in fulfilling their duties, involves a rapid decision-making , which is favored by the bureaucratic structure of the army , as each one of its members is ready to perform specific tasks.

3.1.3 Structuring of organizations

The structure of an organization depends on all the functions and activities performed , as well as the characteristics of the available personnel . The following may be considered forms of structure:

I. Simple structure: In this structure, the responsibility for the activities of a certain section or region corresponds to the person in charge of driving such section or department.

II. Machine bureaucracy: This structure is characterized by repetition and routine tasks performed, which reflects a high level of standardization, i.e., there are a number of norms provided as a based to the activities to develop.

III. Bureaucracy: This kind of structure is based on the selection , since staff is selected after trained .

IV. Divisional structure. It is, more precisely, a set of structures , in which the main role belongs to the division chief , who is responsible for achieving the results.

V. Adhocracy. It is the structure with more flexibility and therefore with less attachment to the classical principles of management. It is defined as a structure characterized by a low level of complexity, formalism and centralism. The adhocracy is a structure with little formalization of behavior, albeit with a high level of horizontal specialization, in which specialists are grouped multidisciplinary into functional units to operate for specific purposes and coordination mechanisms, from a decentralized scheme. Therefore coordination is a key point for this scheme. As can be noted, in the adhocracy is very important the deformatization of the control unit , due the fact that...

(...) The information and decision flow informally, often the chain of authority is exceeded in order to promote innovation. This is because the first thing that this system is proposed is to promote innovation. For this purpose, skilled professionals are contracted and power is given to them in order to produce new knowledge and skills. This obviously requires a combination of different groups, crossing the boundaries of the conventional expertise. A subject specialist can locate, and provide a solution to a problem that has been teasing to another specialist. (Mintzberg, 1990, p. 95)

The army may be considered as a divisional structure, while being composed of sub structures (divisions and subdivisions of the army). The head of each division is responsible for achieving the objectives.

Among the factors involved in the structuring of organizations, we can include: the size of the organization, the environment or setting in which it is immersed, and the technology used. These factors act either individually or combined, in the functioning of organizations. Thus, “the influence of the state of technology, the size of the organization, or environmental characteristics on the face of the organization (...)” (Panebianco, 1995, p. 338) are of relevance. It is considered that these factors influence, but not determine, the activity of the organization. Since the organizations can handle some of the variables conditioning them, by influencing the environment or adapting it while selecting the technology to be used. In the

case of the military, the technology used corresponds to either arms, means of transport, communications and in general, the belic apparatus and intelligence apparatus used by the armed forces to fulfill their purposes.

The existence and organization of the army is regulated legally. Externally, the army is circumscribed to the civil law, which determines their existence and relations with the state. Internally, is governed by military law, for ensuring that the basic purpose of the army as an institution, are maintained and contribute to the organization, conservation and the achievement of its goals. The military law has ramifications in criminal, criminal procedure , administrative, disciplinary , social security, among others. These ramifications differ from those of the civil law.

Hence military, it is an institution governed by the law. From this perspective, these elements can be divided basically into subjective and objective . Subjective elements refer to the axiological , that is, the values necessary for the existence of the army, such as discipline , honor , values etc. The objective elements are of physical and material character, and are also required for the existence of this institution. According to Saucedo (2002), the objective elements are: legal structure, organization, people integrated, weaponry that is provided, and the facilities in which are housed and operate. In the case of Mexico and other countries governed constitutionally, the Constitution is the primary norm for the army.

3.1.4 Elements of the organization

Basically, the elements of an organization are: a group of people, resources, goals and objectives to be achieved. These elements should be combined and dynamically related to processes such as division of labor, the management process, and the ability to remove and replace the human resources.

The basic element of management is the human being which is far from being an automaton. People is vibrant, moody and with their own social and cultural values and personality. The human personality, its effects on the surrounding, environment and the interrelation of both

elements constantly condition the administration. Wherever there is an administrative situation, i.e., wherever individuals are working together to achieve a goal, we can see the dynamic sense of human behavior. (Galván, p. 37)

In the case of the army as an organization, its elements are based on the ability of the military forces to construct themselves, in their integration and command structure. In the case of the Mexican army such structure is headed by the holder of executive power, the President of the Republic.

Administratively, the organization of the army in Mexico is headed by the Secretariat of National Defense (Ministry of Defense), where high command rests within the holder of the Ministry. In descending order, “there is a sub- secretary and chief clerk, followed by the *Estado Mayor Presidencial* (Executive Power Department), under the command of a chief and two deputy chiefs (...)” (Saucedo,2002, p. 83). The Ministry of National Defense includes different areas, including education among them, through the University of the Army and Air Force, conformed of different schools where training in various areas related to the work of the army is provided.

Another element of the army, as an organization, is the human resources, which integrate the active forces of the armed forces, so it is essential that these exist. The integration of the army is given by recruitment or by admission to educational institutes of the army itself. In both cases, it is desirable that members of the army have an adequate disciplinary framework according to the institution characteristics, while having values consistent with those of the army, as well as adequate physical preparation.

The armament is another element of the organization of the army. Its features are based on the areas of the military they are intended for. Some guns are made in Mexico, on plants and factories belonging to the army itself. Others are acquired in the international arms industry.

Another element of the organization is comprised of military facilities, that “(...) are the physical spaces where military activities are taken, within their own housing, barracks or garrisons unfold; they can be equally camps, hospitals, or also any property that the necessities of war or campaign requires troops to remain stationed in such enclosures”

(Saucedo, 2002 , p. 84). These facilities should be safe and healthy, and should have modifications for rest, eating, recreation, administrative work, storing food and weapons, so training of military personnel can be given .

3.2 Systems of beliefs

Beliefs are the ideas or worldviews in which people base their life and actions. They are not presented in isolation , as a belief is accompanied by other beliefs and , in turn , are linked to attitudes, values , orientations, feelings and opinions.

The philosopher José Ortega y Gasset, in 1940 in his work “*Ideas y Creencias*” (Ideas and beliefs), considered that thoughts – in any form - arises from a doubt arising from the dissatisfaction resulting from the imbalance between ideas and beliefs. The ideas designate...

(...) Everything that appears in our lives as a result of our intellectual occupation. But Beliefs are presented to us with the opposite character. We cannot get to them after a task of understanding, as beliefs are already operating in our bottom when we start to think about something. That's why we do not usually formulate beliefs, as we are pleased to refer to them as we do with all that reality itself (Ortega y Gasset, 2008, p.3)

Thus, for Ortega y Gasset, the beliefs are underlying the self-being, or the mode of being of individuals as people. Our beliefs are part of life and human thought. The origin of thought arises from the human need to doubt or question, due to dissatisfaction caused by the mismatch between ideas and beliefs. Doubt is a first step towards knowledge which in turn is part of the process of learning. Therefore, both , the known and knowledge are based on the doubt, as a starting point to check the processes, in order to provide structure to the system of ideas and reinforce beliefs.

Ortega y Gasset (2008) states that the ideas are developed by people based on imagination. They are mental constructs that arise in consciousness; they are ideas that build up the thought, even if though not always reflect external reality. Beliefs are defined by the integrated system of ideas and thoughts, from the explanation of reality. The reality, as life experience, is for Ortega y Gasset a process of historical integration of ideas believed without hesitation. Beliefs are linked to religion, idiosyncrasy, to science, lifestyle, economics, and politics and, in general, the different compartments of human life.

The basic ideas of the individual and of his time influence the existence of the person. As they constitute the relationship with the world and himself. Ortega y Gasset (2008) calls "belief" to these basic ideas.

(...) Those ideas that are, really, "beliefs" are the continent of our lives and therefore do not have the character of individual contents within it. Should be said that they are not ideas we have, but ideas we are. Moreover: precisely because they are for us radical beliefs confused with reality itself - they are our world and our being -. Beliefs have lost their nature of ideas, their condition of thoughts of our own that could be very well not to be occurred by ourselves. (Ortega y Gasset, 2008, p. 2).

The human requires interpreting the world, to settle on it. From their interpretations, convictions and thoughts arise. Ortega y Gasset distinguishes two of them: ideas and beliefs. Ideas are thoughts that emerged based on reality, i.e., are descriptions that may be assessed and considered as a work of thought itself.

In other words, ideas are thoughts related to reality and product of intellectual effort. Meanwhile, beliefs are latent convictions that define the relationship with the aspects of life.

From the perspective of the social sciences, beliefs and belief systems involved the sense of interaction. " The men developed them through processes that from the subjective interiority

project themselves to relations with the ' other ' and from that environment , once reconfigured they are back to, re- shape what was believed subjectively generating thus unfinished and recursive sequences " .(Fernandez, 2007, p. 3). The effects of this constitute guidance for human behavior, besides being part of the collective imagination.

From a sociological perspective, beliefs have a role within internal aspects of social relations. They are part of social activity by providing sense to it. For Fernandez (2007), beliefs are bonds that are expressed by complex symbolic systems changing over time, which shed light on the understanding of human activity. She points out two basic types of beliefs:

“One, founded in reflexivity whose function is to guide the action according to achievement and are the so called “rational beliefs”. “The other has as foundation, different beliefs not rational or a-logical (...). Within the spectrum that comprises them other types result from their combinations. Therefore, we can infer that whatever the type of belief that gives meaning to action, provides justification elements involved to complete, maintain, amend, suspend or end it.” (Fernández, 2007, p. 4)

Beliefs may be changing between different societies and even within different sectors that come together in a society. As for his denomination, Fernández proposed the following terms:

- A) Valuatives, when its character is normative.
- B) Religious, if sustained by faith and transcendent thought.
- C) Political, when are part of ideologies.
- C) Worldviews, when combined with other beliefs

All of them have in common that the process of internalization is simultaneously individual and collective. Besides being the basis justifying human action and “(...) its function is to

satisfy the need of man to understand the meaning of life and the world he shares with his kind" (Fernández, 2007, p. 4).

Beliefs are linked to ideology, which deals with ideas as products of the mind. Specifically ideology is a set of ideas or beliefs that allow to legitimate relations of domination, which is related to politics.

Both the ideas and beliefs have a cognitive dimension. According to Ariño (2007) , this can be conceived in two ways:

- a) that all ideas , in addition to mental , are also products of communication , interaction and socialization , because our experience of the world cannot stop from being a group experience ;
- b) that certain ideas also have an abstracted existence independent from individual subjects , i.e. , that are shared by a group and that exist beyond and further and in a sense independent of the specific persons where they are to exist (...) (p. 141)

At a social level, belief systems are organized based on their contents or dimensions they relate to. These dimensions are: “The *political* or social organization, *cultural* or of basic knowledge and *social* or personal relationships. The three dimensions gather virtually any type of beliefs that can arise in a system organized to interpret the world.” (Seoane and Garzón, 1996, p. 83)

The beliefs related to the political dimension of social organization refer to the form and manner in which the society operates, both on its principle and in its action. The political beliefs provide insight on political institutions and allowing us to evaluate political institutions and their effects on members of society.

The perspective or cultural dimension refers to the fundamental knowledge about the world understanding, the explanation of things and how they works; the past and the future and , in general, the values of civilization to which it is related , including religion, science and social functioning .

The social dimension includes personal relationships and, therefore, “(...) beliefs about the interaction with others, forms of relationship or care of feelings” (Seoane and Garzón, 1996, p. 84) on relationships of all kinds. The three dimensions are integrated into an overall system of beliefs, which converge in a given worldview.

The categories of beliefs above have correspondence with psychological aspects:

The *policy* dimension reflects the social will, the direction of our desire, and what we want; the *cultural* dimension manifests the representation of the world, the construction of reality, thought; the social dimension is the expression of what we feel and how we feel. Volition, thinking and feeling are the three psychological categories provide foundations to our belief system, form and way of believing according to the culture to which we belong. (Seoane and Garzón, 1996, p. 85)

These before mentioned dimensions have for an individual or group , or even for an organization, a certain meaning and a way of being valorized, which varies according to the society and the time they are happening . Thu beliefs are defined by a way of life, through daily habits.

The starting point for identifying the prevailing systems in the armed forces is its teleology by having notion of their ultimate goals. While

(...) once stated that the purpose of the military is to wage war, as war as a brutal event serves as the sole cause of its existence, but we may think that a country may never manifest belicologic (war science related) symptoms and due that it can be considered that the extraordinary effort to maintain Armed Forces undermines the economics, as it represents an unproductive and unnecessary spending on weapons and training of apparently unoccupied men. (Saucedo, 2002, pp. 98-99)

However, the Army aims to prevention of problematic situations that must be solved by armed events, both internationally and within the country. Thus the army as an institution aims to provide safety and security to the nation and citizens.

From the above the beliefs that provide support to values which the army is based emerge:
Defending the integrity, sovereignty and independence of states.

In cases of disturbance of the public peace or the established order, the army can intervene to guarantee the internal security of the country.

3.3 Authority

The authority is a key element in the organization of the army, referring to a link between the order and the execution of it. From a philosophical perspective, “(...) the authority (...) always carries a relative meaning, essentially consignees a relationship.”(Bochenski, 1978, p. 19).

This relation is composed of three elements :

- a) The "carrier" of authority (who has it)
- b) The "subject" , i.e. the person on which it has authority
- c) The "domain " , this is the field in which the authority has , since there is no single valid authority in all fields .

In turn, Bochenski (1978) distinction between the epistemological authority referred to knowledge, and the deontological authority, which implies a hierarchy superior and rules of conduct. The epistemological authority belongs to knowledge and instruction: Hence is the authority of the most trained. The deontological authority belongs to the person who represents: a leader. The coexistence of the two types of authority in one person may happen, but not necessarily.

From a sociological point of view, Max Weber (1996) develops the authority from the link between economics and sociology, especially with regard to power and legitimacy of

authority. Weber (1996) depart from the concept of legitimate authority (different from divine authority), which was conceived as a mechanism for the imposition of the will of a person on the behavior of others, and which cannot be exercised by all individuals. Identifies three types of authority:

di) Traditional authority is based on the acceptance of the customs and habits that grant legitimacy. This type of authority originates from custom and is reflected in political institutions with hereditary duties, whose legitimacy is the custom. Thus, it is only a small sector of the population which can decide the changes.

dii) Charismatic authority is based on the acceptance of influence of superiors by personal characteristics: it is about the leadership. Thus a boss is such due to his personal qualities. Charismatic authority can become traditional, when enough time passes. This form of authority has a sociological and psychological basis.

diii) Legal-rational authority. The acceptance of authority is based on the rational belief of individuals in the legitimacy of the rules governing the exercise of power . These rules regulate the right of individuals to become active subjects of authority. The basis of this type of authority is the principle of legality.

José Luis Cea explains the authority as...

"(...) The power that governants and governed consider legitimate from its origin and thru the investiture of those whom have the power, as well from the exercise or activity that unfolds the invested person in conducting political society. Such legitimacy means free and conscious recognition of the capacity to rule of some men over the others, such recognition must come from both sides of the political relationship just named but among them in a superlatively way from the governed, because authority is the power held in the service of the community , is the domination as activity straightened to achieved the common good and not to serve the governed in to their detriment ." (Cea, 1989, p. 94)

Thus, the authority must be provided of legitimacy and oriented towards collective benefit. It is a legitimate and institutionalized power, whose behavior should be continuous while regulated, enclosed and controlled by legal standards. Cea (1989) also defines authority as an attribute, quality or virtue of the legitimate ruler.

From a political standpoint , the authority is a symmetrical and reciprocal relationship , involving consensus and collaboration between the rulers and the ruled . Thus, " (...) authority is that legitimate power reputed by governors and governed by a system of government that leads to , obedience, compliance, and cooperation as it is righteously served according to fair law and not merely positive or formally legalized ." (Cea, 1989 , p. 96).

In the military , authority is associated with power, so it is important to distinguish between the two. As according to Cea (1989)

Power is the capacity or possibility to act and consequently is actual or virtual energy to produce effects in two areas : first, in human society by determining the behavior of men by other men to the extent to reach a punibility reaction in an eventual break of the rule by those imposing it; and secondly power will produce effects in the middle of nature or environment when certain *phenomena* generates changes in other physical objects (...) (p. 90).

From a political perspective, the power is human energy that operates within the social life. It differs from the natural power and those aspects of social power that are not associated directly to the state government and its relations with other States. Political power does not exist in a pure state but is linked to other powers, such as social, military , socio-economic or legal , among others. The authority can be understood as a quality possessed by a person or a post, which gives the right to give orders and directions , so that it implies a relationship of subordination. From a social perspective , authority is based on relationships of different

nature and is part of an Organization - institutional, governmental , and academic , etc. The concept of authority is related to sovereignty , freedom, power, influence , leadership and competence.

Within the development of the concept of authority, the contribution of Hannah Arendt has been taken into account (1996) for whom the authority is a historic construction, as it was not intended as such in the ancient world; while in the modern world prevails a form of authority produced and exercised in the West. Although authority is a prevailing factor in human communities , it has not always existed .

The origin of the term and concept of authority is Roman, and it was obtained by the ancestry and tradition from their ancestors. Thus, among the Romans "The authority , unlike the power (potestas) , had its roots in the past, but in the real life of the city that past was no less present than the power and strength of the living." (Arendt, 1996 , p. 130) Therefore we can infer that the relationship between the authority and education it is rooted from the examples of the past.

From an administrative point of view , authority refers to the foundation of the organization. Especially to the acceptance of the authority in communication and transmission of orders, which are to be accepted as determinant for its activity by a member of the organization?

In this sense, the authority has two aspects : “a) Subjective : which implies the subjective acceptance of communication as something authoritarian , dictatorial , and b) The objective: which implies the formal character of communication” (Da Silva 2002 , p 194) .

Therefore, communication between and every member of the organization -which implies a vertical relationship of dependency or subordination- is necessary for the existence of authority. Thus, the authority originates from its acceptance by subordinates, and not from the people in possession of authority. Thus, disobeying an order means a rejection to authority . In the case of the army , it is clear that the operation of this institution is conditioned on the subordinate acceptance of authority.

3.4 Gender related issues

Historically, the military has been a predominantly a male institution , identifying the defensive or offensive force with men as a gender . However, there has been integration of female gender into the army , although there have been various obstacles to achieve their full participation and acceptance within the military.

Many of these barriers are based on the roles , socially and culturally , are attributed to men and women , often in the form of stereotypes. An example is the designation of women as the "weaker sex," which implies the idea that women should be protected and kept away from the battlefield , unlike men , who are supposedly endowed with courage and aggressiveness , which can be deploy in battle to defend the weak (including women, children and the elderly). This inherited factors condition the marginalization of women.

Among the first armies to formally integrate women into their ranks , are the United States and Canada , in a process that began in the late nineteenth century. Initially it was limited to women to perform tasks considered feminine, for example in the area of health , cooking or sewing and tailoring of uniforms .

The impetus behind integration was varied: sometimes political, sometimes rooted in need based on personnel shortages and wartime experiences. Each step was met with the resistance that inevitably accompanies change, though after a period of adjustment was retroactively acknowledged to be most successful. (Rzechowka, 2010, p 71).

In the twentieth century, during the First World War , efforts increased to integrate women in armies. However, the customs and prejudices of the time , and the military tradition that until then was mostly male , caused that women were not identified with the kind of values and proper conduct necessary for military life .

In line with international trends , the Mexican Army has integrated women for decades , although their functions are *de facto* restricted to areas identified with traditional female roles , such as nursing or administration . In particular , in 1938 the Military School of Nurses, was created exclusively for women, whose participation in the armed forces was expanded in the late seventies , when women were admitted into the Army Medical School and the Military School of Dentistry. " The Secretary of National Defense (Department of Defense) was a pioneer in Latin America in the admission of women into the armed forces in 1937 , just after Paraguay (1932). However , participation of females in the Mexican Army remains limited (...)" . (Aranda , 2012).

To address this issue , there is a program of equality between women and men in the Secretary of National Defense. Its main purpose is to “contribute to eliminate all kinds of discrimination and ensure equal opportunities between women and men in the Army and Air Force , through equality in gender relations .” (Transparencia presupuestaria, 2012).

Therefore, this program seeks to reduce social, economic and social gaps between women and men dealing with equality of justice, and aims to prevent discrimination. Specifically seeks to promote conditions for professional development of women in the Mexican Army and Air Force , on equal terms with men .

Near the end of the first decade of the twentieth first century was began to admit women to the profession of arms , in the different schools within the University of the Army and Air Force : Heroic Military College , the Military Academy of Engineers , Transmissions school and College of the Air. In them , women can graduate as officers in all specialties of war considered in Mexico 's army .

Overall , according to data from 2010 in Latin America only the armies of Mexico, Colombia , Nicaragua , Uruguay and Venezuela have changed their restrictive laws and regulations to integrate women into the active armed service. However , female participation is partial in the armed forces of Argentina , Bolivia , Brazil, Chile, Ecuador , El Salvador , Honduras , Guatemala , Paraguay , Peru and Dominican Republic (Aranda , 2012).

3.5 Ethics and Values

The study of values is related to the field of ethics, and it tends to determine the best actions to take, in terms of behavior and life, which is essential in the case of members of an institution such as the military.

Ethics arises within philosophy, in order to clarify concepts such as duty or happiness, and to elucidate the existence of guidelines or references for human behavior. Therefore ethics have to do to the plane of what *should be*, rather than the plane of *being*. While ethics considerations about the acts themselves may contain, at the individual level, a positive or negative appreciation, where the right doing it is the behavior considered as a duty that is an obligation; it is important to consider that not always the righteous exercise of a duty leads to individual happiness of the members of an organization.

Happiness as desire is radically a draft in dissent: what we are offered nothing can suffice. (...) The pleasure or utility or even the well being are meaningless as life ideals if we do not relate them to happiness, while happiness persists in not to be exhausted by any of them, not even as a whole (Savater, 1999, p. 17).

Ethics is a science of behavior, since one part can be referred as the science related to the goals and objectives towards human behavior is endeavored, considering also the means to achieve this goal, in this sense; means and purpose are derived from human nature. The purpose or objective is related to the ideal to which humans are leaded to. Ethics can be seen as a reflection on human behavior in order to guide our actions. In spite of this, we must think about the reasons or causes behind human behavior, as well as the forces that determine it. The role of ethics in education systems of military and civil type are of great relevance relevant due its constant interaction with society.

Ethics “is not a simple detailed or deep description, but a theory, i.e. It is a universal justification. If there is not at least the attempt to justify the universal sense of an action, no ethics are involved” (Savater, 1999, p. 26). Therefore, ethics must combine the universal and

the individual elements, to provide a rational foundation for the actions chosen with plenty of sense, in order to build a complete and complex meaning that legitimizes the action as a whole.

That is why “the ethical problems are characterized by generality, and this distinguishes them from the problems of everyday life.” (Sanchez, 1999, p. 13). Therefore, ethics can be considered a theory that should explain, investigate and clarify a certain reality, leading to pertinent concepts. Ethics and morals are both historical. Nevertheless ethics are general and universal, while the moral is practical.

The moral, political and legal values are very important, but in order its performance to be effective, the collective agreement is required and achieved through institutions, parties or action groups, such as the armed forces. Instead, ethics refers to human ideal, whose achievement lies in each person, either individually or collectively. However, ethics does not create moral because, although all morality is based on principles, norms or rules of conduct, they are not created by ethics, which can be defined as “the theory or science of the moral behavior of men in society. In other words, it is a science of a specific form of human behavior.” (Sanchez, 1999, p. 16).

For Fernando Savater, the validity of the action can only be judged by the person making the decision, and cannot be judged externally. Therefore, “what differentiates ethics from any other determining attitude is the fact that it represents *what is always in our hands*. That matter in which no authority can replace our lesson and defense with no indignity, where no group convention can apologize us in the very end.” (Savater, 1999, p. 60).

Is in the concept of ethics resides the notion of good , however , can be distinguished on the one hand , the notion of what it is good in itself, or as an object of desire or aspiration. In the first perspective analyzed the notion of good means a perfect reality or real perfection. In the second perspective, the notion of good refers to the object of appetite.

Contemporary philosophy has replaced the notion of what is good for the notion of value, which is reflected in ethics. In this respect, the value has a way of being objective, as can be understood independently of palatability. However, the value is given in a form of specific experience, since the value is distinguished by its objectivity, its simplicity -while being indefinable, indescribable- due its necessity or problematic nature. The need for value corresponds to its eternity or absolutism condition, which relates it to the ethical doctrine of the end. The problematic nature of value is close to the ethical doctrines of motivation, previously analyzed.

Values are key elements to the army, since they strengthen the bond with the institution and their members. Values guide the conduct of the military directed towards their fellow soldiers, the army itself, society and even the enemy. The values are associated with the virtues:

The military virtues are discipline, honor, team spirit, love of country, *valeur*, cold thinking, and presence of mind strength. Discipline is the unifying link between the members of the armed forces, without it we would be in the presence of a social danger. (...) The discipline engenders a relationship between lower ranks and upper ranks leading them to act as one man without regard to political affiliation, religious, social or economic (...) condition. (Saucedo, 2002, 93)

Discipline , therefore, is one of the core values that spread, kept and cultivated in the army, as it is a factor of cohesion and unity among the upper and lower sectors of the army, so them can acts as a single organized entity.

The honor is based on self-esteem and perception of the esteem that others feel towards one, as it is in the sense of dignity. The team spirit is a feeling that binds the individual to the group and, in general, with the corporation to which it is attached. (Saucedo, 2002).

The valour "(...) is the feeling that makes us do our duty, notwithstanding the vicissitudes that may arise, even at the risk of life." (Saucedo, 2002, p. 96). That is, the decisions of timely tackle critical situations, with serenity and animosity based on self-confidence. Another

military value is loyalty , which refers to intrinsic obedience the soldier should have to the institution and to his country, never the less is also possible to build up loyalty bounds with individuals in the hierarchy of the organization, in a vertical or horizontal way .

3.6 Sources of financing: Funding

In general, given the relationship between the state and the armed forces, the financing of these is borne by the State, through the public budget. There are, however, partial exceptions to this founding mode. Examples include the Chilean and Chinese cases.

Since the 1973 military coup in Chile, the South American country's armed forces have received partial funding, with 10 % of the profits of the state copper company Codelco. This mechanism is regulated by a law called “Copper Law”. However, the governments of Michelle Bachelet (2006-2010) and Sebastián Piñera Echenique (2010-2014), have made attempts to change that law.

“The transfer of money requires a delicate process. The capital is deposit in dollars in an account of the Banco Central de Chile, administered by the Superior Council of National Defense (CONSUDENA) the agency is in charge of managing spending of reserved laws related to tools for military use. Funds are distributed equally among the Army, Navy and Air Force. The CONSUDENA, the Ministry of Defense and the President monitor costs, so that finally the latter is who approve the purchase of military equipment and military equipment.” (Americaeconomica, 2012)

In the case of China, even though the budget for the military is high and has even increased costs grow steadily.

In 2012, the growth in defense spending was 11%. In China, military expenditures grow faster than GDP. Remains a priority for Beijing’s increasing military might of the army. (...) Is evident than in the new development stage doors will be open to private capital so it can be incorporated into the solution of very important problems of national defense. Worth to note that China's arms exports grows dynamically in all

segments. New investments will help to develop innovations in defense, in order to give the Chinese People's Army increasing possibilities to project its force for the defense of national interests. (Karneiev, 2012)

Hence it is open to the Chinese private sector the opportunity to invest in the army of that country, particularly in the modernization of the army through the manufacture of armaments and restructure of State owned military enterprises (Karneiev, 2012). Before this private participation in the Chinese army was allowed, but was limited to the provision of certain parts and materials.

The budget allocated to the Mexican military is of federal origin. And it's delivered to the Secretary of Defense and the Navy, which integrate these forces. The money is applied to military operations and infrastructure, and o to other areas, such as education, military justice, social and administrative services.

It is pertinent to mention that the national security policy followed between 2006 and 2012, ordered the involvement of the armed forces of Mexico in the fight against organized crime mainly in their mode of drug trafficking, which meant an increase in the budget usually allocated to the military sector and, in contrast, a decrease for other areas of the government considered less strategic, such as education and culture.

Meanwhile, the budget for the Mexican armed forces is asymmetric and differentiated for each of the institutions within them, which is that “Military institutions are governed by outdated organic laws and constitutional legal framework separating Armed Forces in a manner that fosters their rivalry in the preparation of their budgets.” (Sierra, 2011). This involves the dispersion of the national defense policy, and the relationship between military institutions and civil institutions in charge of allocating the budget, such as the Ministry of Finance and Public Credit, the Chamber of Deputies and the Supreme Audit Office.

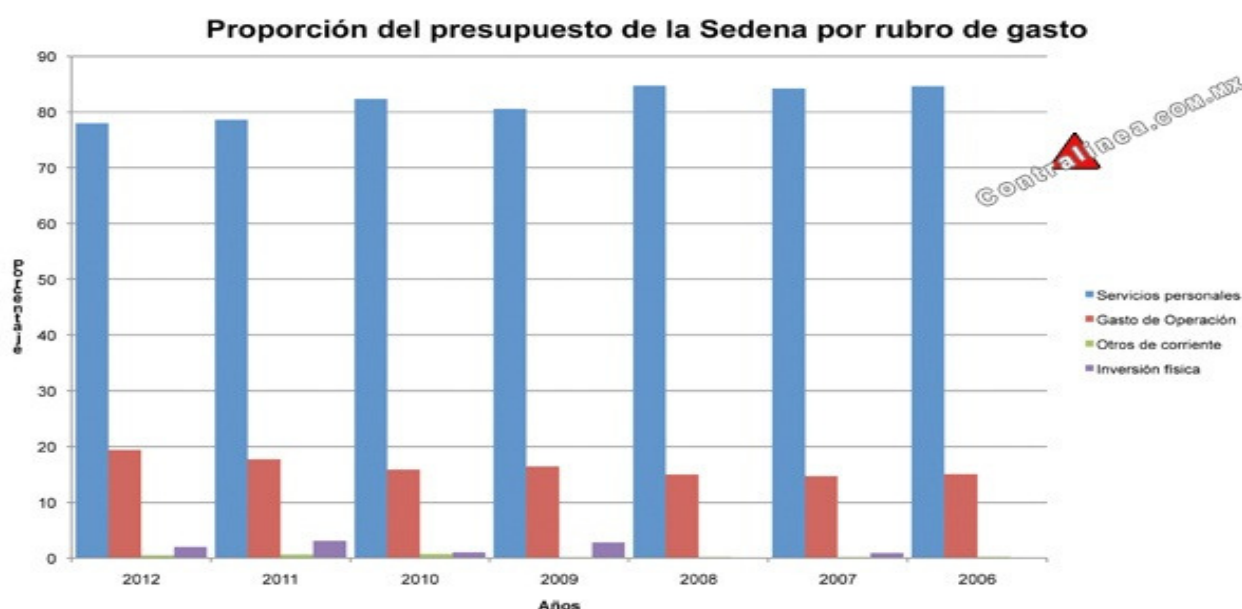
In these circumstances, the military budget is defined using the cyclical demands of the President of the Republic, and the needs that each Armed Force presented separately. The result has been the creation of armies converted to a hybrid military-police that do not necessarily agree with the plan to create an effective national defense force for Mexico. (Sierra, 2011)

In late 2012 during the previous national administration, we learned that:

The Mexican Army has the lower allocation percentage of Gross Domestic Product (GDP) in Latin America, with 0.49 percent, just above Guatemala, which has allocated 0.40 percent of GDP. (...) Only 2.06 % of the budget of the Mexican Department of Defense is oriented to investment projects procuring the acquisition of tools, equipment procurement, construction of infrastructure and research. (Vega, 2012)

Figure 1 Source: SIERRA, Jorge Luis. (2011). "Las anomalías del presupuesto militar". En Contralínea (on line). 30 de Octubre de 2011.

The graph refers to the budget expenditure of the Ministry of National Defense of Mexico, between 2006 and 2012.



In blue we can observe the expenditure in personal services as salaries and social benefits of the army. In red we can see the operative expenditure. In purple the investment in infrastructure. And in grey color (invisible) other expenses.

The previous graph show the poor investment in military infrastructure, which is highly necessary for the military education and training, and the high expenditure on salaries and other services no fundamental for the armed forces. In 2012 the investment on military education was barely scratching the 3.1% of the total Military expenses. This can be an indicator of what is the state of the military education. It seems that the armed forces are expending more resources on non-fundamental services for the objectives of the army. One proof of this is the existence of a Military bank, which can be variant of the funding for the armed forces, in the Mexican case, this is the National Bank of the Army and Navy , created to meet the financial needs of members of the Army, Air Force and Navy of Mexico , through the granting of credit and support to commercial companies composed of military elements, so nowadays has been incorporating modern multiple banking functions. This fact is clearly reflected in the previous figure where we can appreciate that the army at least in that year, allocated more resources for personal services and for the military community than to education or infrastructure. This can drive us to further question about what are the priorities of the army in matters of funding.

4 Military Education

While the Mexican armed forces were born in the period of the revolution (1910-1921), it was until 1970 that began modernizing its education system, by increasing the number of schools and establishing new specialties, and developing the criteria that have prevailed in their transformation. The literature on the subject (Garduño , s / f ; Moloeznik , 2008) reports that there have been significant curricular changes over the last decades in military training , as roles of the armed forces have been evolving in different periods. The military went from a passive defensive military nature, to currently have been concentrated on internal actions (as security force for the civilian), generating a problematic scenario that many scholars have strongly criticized (Moloeznik, 2008; Arzt, 2010). The new focus of the national armed forces on national internal security expose them to the influence of factual legal and illegal powers, present in the environment. .

Educational institutions of the military have had to adjust to the demands of current times and act in different scenarios. In one hand to be ready to operate in a conventional context, and in the other hand, in an asymmetric war or campaign against organized crime and terrorism. The armies of the world have had to adapt to a new reality, which has transformed its educational institutions and their systems of selection, promotion, training and personnel management. Formal military higher training is described in more detail in this chapter, in which the characteristics of civil education system are also outlined, in order to see some of their similarities and differences among them.

4.1 Civilian education and Military education

The following sections describe the characteristics of the current civil and military, educational systems in Mexico.

4.1.1 Civilian Education in Mexico

Here we present some generalities about the education system in Mexico, as it is established on its legal framework, the characteristics of the system and its organizational model. It also relates to the existence of public and private education.

4.1.1.1 Definition

According to Mexican law, it can be inferred that education is conceived as a process and as a right. Thus, the General Law of Education, in its second article, states that education is a lifelong process that leads to the development of the individual and the transformation of society as well as being a key factor in the acquisition of knowledge to form an individual with a sense of social solidarity (<http://basica.sep.gob.mx/dgei/pdf/normateca/LeyGeneraldeEducacion.pdf>). Moreover, the Constitution of the United Mexican States, in its third article provides, as part of individual guarantees, the right of everyone to education and respect for their freedom of teaching, learning, research and cathedra. Hence the obligation of the Mexican state to provide educational services for the entire population in primary, secondary and tertiary education while granting access to basic education -preschool, primary and secondary-, with a secular character and separated from any religious doctrine and in gratuity.

4.1.1.2 Objectives

Mexican law *Ley General de Educación* (Education General Law) also establishes the purpose and goals of education, which are formulated as follows:

- I. - Contribute to the integral development of the individual , to fully exercise their human capacities ;
- II - Encouraging the development of capabilities to acquire knowledge , observation skills , critical analysis and reflection ;

- III - Strengthen awareness of nationality and sovereignty , appreciation of history, national symbols and national institutions , as well as the valuation of the traditions and cultural characteristics of the various regions of the country;
- IV - . Promote awareness through education of the linguistic diversity of the nation and respect for the linguistic rights of indigenous people. And ensure access to compulsory education taught in Spanish and in their own language for the speakers of indigenous languages.
- V. - Instilling the knowledge and practice of democracy as the form of government and coexistence that allows everyone to participate in decisions making to improve society;
- VI - Promote the value of justice , observance of the law and equality of individuals before the law , as well as promote awareness and respect of human rights.
- VII - Foster attitudes that encourage research , scientific and technological innovation :
- VIII - Promote artistic creation and encourage the acquisition , enrichment and dissemination of goods and values of universal culture , especially those which constitute the cultural heritage of the nation ;
- IX - Encourage physical education and sport activities;
- X. - Develop supportive attitudes in individuals, to raise awareness about the preservation of health, family planning and responsible parenthood, without prejudice to the freedom and with absolute respect for human dignity and to promote the rejection of vices ;
- XI - . Inculcate the fundamental concepts and principles of environmental science, sustainable development as well as assessment of the protection and conservation of the environment as essential to the full and harmonious development of the individual and society.
- XII -.Encourage supportive and positive attitudes towards work, saving of economic resources and general welfare. (Article 71)

In general and in theory, public education in Mexico is oriented to the integral construction of individuals and society. Its purposes are also those of democracy as a system in which people live together in solidarity, who have been provided with the knowledge and preparation necessary for the proper functioning of society as such while promoting a national culture.

4.1.1.3 Organizational model of civilian education in Mexico

According to the Mexican Constitution the education system consists of 3 educational levels in general: primary, secondary, and higher education. Additionally, the system provides special education services, job training, adult education -literacy, primary and secondary education, non-formal job training) and native or bilingual and bicultural (preschool, primary and secondary) education. (Gobierno Mexicano, 2010, Art.3).

4.1.1.4 Public Education

In Mexico the state has an obligation to provide educational services to all people so they can receive preschool, primary and lower secondary education. Residents are also required to attend both primary and lower secondary education - *Ley General de Educación*, Article 2 & 3. Similarly, the State must promote and address all types of education, including higher education institutions necessary for the development of the country.

Secularism and gratuity in basic education are constitutive elements of the services provided by the state. The law also states a common guiding principle for both public and private education, which should be based on the results of scientific progress in order to fight against ignorance and its effects, servitudes, fanaticism and prejudice. Other basic aspects of education established by law are, first, its democratic character, referred not only to a legal structure and a political system, but also to a way of life based on constant economic, social and cultural development of the population. Second, it is of national character in an effort to overcome hostility and exclusion to understand the country's problems, and foment the best uses of resources, defend their political independence, ensure their economic independence and promote continuity and growth of the culture. Thirdly, education is defined by its contribution to human coexistence through knowledge.

4.1.1.5 Private education

The Constitution and laws in Mexico stipulate private participation in the provision of educational services, with authorization or recognition of official validity of studies. A

regional study (Pereyra, 2008) noted that the supply of private education in Latin America is similar among countries in basic education: primary and lower-secondary. At these levels, 18 % of students are attending privately run establishments. In the case of Mexico, the study highlighted that the national trend differs from the regional pattern, with 90 % of elementary school students and nearly 86 % of secondary education attending public educative institutions.

Facing these indicators, other data related to the expansion of private education in Mexico in the early twenty-first century (Instituto de Investigaciones sobre la Universidad y la Educación, 2002) has been produced. This expansion of private sector was accompanied by two elements: first, a cap on the expansion of public coverage of 30,000 places a year in basic education, and second, an annual lag at all levels of coverage targets directed mainly to the cities, which was estimated at 6000 places for public education and 48,000 for private.

Therefore, the State generated greater opportunity for the private sector to pursue educational services for children and young people "with no place" in the public school. In this sense, the increase of private education institutions has been significant especially in higher education (Instituto de Investigaciones sobre la Universidad y la Educación, 2002). As result of such budgetary policies, from 1995 to 2002, private education grew, while public investment in education was reduced. During this period, the increase in enrollment in primary education rose from 5 to 8 %, but in higher education rose from 23 to 32 % to almost 33 percent in 2011-2012 (Tuiran, 2012)

The number of private universities increased from 809 to 1253, i.e. 444 new institutions were opened, and this represented 72% increase in educational institutions of higher education. As for what has to do with enrollment, it increased from 298,000 students to 525,000, i.e., there was an increase of 54 % compared to the national undergraduate enrollment total within the prescribed period. In contrast, only 13 more federal and state controlled, public institutions of higher education campuses opened, accounting for 2.1 % of all new schools, while absorbing 25% of the enrollment growth. (Tuiran, 2012)

4.1.2 Military Professional Education: Military Higher Education in Mexico

In Mexico there are three armed organizations, distributed in 2 *Secretarías* (Ministries): first, La Secretaría de la Defensa Nacional (SEDENA), which covers the Mexican Army and Air Force, on the other hand, La Secretaría de Marina (SEMAR), which is Mexico Navy. In this section, we will refer to both departments, because they have educational systems that operate independently.

4.1.2.1 Definition

Documents Published by SEDENA (Ministry of Defense) consulted for this research, define education as a process in which the human being, according to his capacity and innate ability, gain and displays values, skills and attitudes. These elements are to be applied by people in a responsible and committed manner in to the field surrounding; and in order to exponentially favor progress, growth and economic and cultural development of a country (SEDENA, 2005; www.sedena.gob.mx). In these documents, it is stated that there is a close link between training and education, though they are two separate systems, both set the basis and main support for the operation of the Mexican Army and Air Force whose mission is summarized as the defense of the integrity, independence and sovereignty of the nation, basically. For the preparation of military human resources, *El Sistema Educativo Militar* (the military education system) was created.

This military system is an academic and doctrinal scaffolding, comprising the set of educational institutions providing knowledge of various purposes, levels, types and modalities for the military, based on a philosophy, doctrine and infrastructure created for the military, under the leadership of *La Dirección General de Educación Militar y de la Rectoría de la Universidad del Ejército y Fuerza Aérea* (The General Directorate of Military Education and the Dean of the University of the Army and Air Force) The education that is

taught in the Army and the Air Force is organized and instrumented through the *Plan General de Educación Militar* (General Plan of Military Education).

This plan is a technical and management tool, which should be theoretically reflected in the plans and curricula, methods and materials used in the military for the implementation of the teaching and learning process in military educational institutions.

A specific role of education in the military is to provide the opportunity for advancement and promotion of members of the army, from the level of the private (foot troops) to the level of officers and commanders.

The *Ley de Educación Militar del Ejército y Fuerza Aérea Mexicanos* (LEMEFAM) (The Education Law of Military Army and Air Force) provides in its Article 4 that military education has the objective to form individuals into the military to practice and exercise the military command while conducting teaching activities , dissemination of culture and research for the Mexican Army and Air Force .

Therefore in a very limited sense, should be considered the particularity of the interests and objectives of the military education, which, as noted earlier, aims to develop the physical, moral and intellectual capacities of its members, through educational processes rooted in the values of the state and on those proper of the armed forces.

In the specific case of SEMAR its education is regulated by the *Sistema Educativo Naval* (Naval Education System) (see Table 1), which is governed by a regulatory framework where the primary objectives in navy education are established.

The concept of education that emerges from this legal framework (see Figure 2) highlights the importance of training and staff development in the Navy in order to obtain the knowledge and skills to fulfill their duties.

More specifically, the naval education model speaks of “Training, forming, and specializing human resources of the Navy of Mexico in order to achieve optimal educational and professional development aimed at making them more efficient and competitive in their functions and thereby contribute to the achievement of institutional objectives” (Modelo Educativo Naval Siglo XXI, 2006, p. 1).

Figure 2. Normative framework of the Naval Education System(Marco normativo del Sistema Educativo Naval)



Source: Secretaría de Marina. Dirección General Adjunta de Educación Naval.

http://www.digaden.edu.mx/menu%20principal/index_marco_normativo.htm

In the above figure we can observe a hierarchy of norms instrumented from top to bottom in the normative framework of the naval education: At the top The political constitution of Mexico, followed by the national plan of development and followed by the general education law from the education ministry, and after by the organic law of the arm forces, and after by the general plan of naval education and at the bottom the called “Educative Naval Model XXI Century” which are related to the current practices in naval education.

4.1.2.2 Objectives

According to Article 5 of the *Ley de Educación Militar del Ejército y Fuerza Aérea Mexicanos* (LEMEFAM) (Law on Military Education of the Mexican Army and Air Force), the military education goals are:

I. Develop in a harmonious and integral way the members of the Mexican Army and Air Force ;

II . Encouraging the development of faculties to acquire knowledge and observation skills, analytical and critical thinking;

III. A Permanently link education and training of the military;

IV. Promote institutional awareness, values and military doctrine;

V. Promote the value of justice, law enforcement and equality of individuals before law, and to foster the awareness and respect of human rights.

VI. Strengthening the knowledge focused on the preservation of health and environmental protection.

The same law, on Article 12 provides that the role of the military education system is “to acquire, transmit and enhance the military culture that contributes to the overall development of the professional military to fulfill the duties imposed by armed service” (LEMEFAM, 2005).

Regarding Mexico’s Navy, objectives are stipulated according to the academic level of naval education system and the hierarchical rank of its members. Their education norms are primarily related to basic training, preparation and formation (professional). The basic training seeks to systematically prepare or train an element or group of elements in a process

conceived in order to allow individuals to efficiently perform an activity in the shortest time possible and with the minimum of theoretical knowledge. In the same vein, the preparation aims to prepare its members to play an activity or function according to its branch and hierarchical rank based on an average level of theoretical and practical knowledge. This level of education is aimed primarily at *clases* (lower rank) staff and seamanship in a schoolarized way. Finally, formation is understood as the academic preparation required to participate in decision making according to the hierarchical rank for which higher-level knowledge both theoretical and practical is given (Modelo Educativo Naval, n / d).

The functions of the Naval Education System are:

" Train, prepare and form proactive, responsible professionals; aware of the commitment to the integral defense and their active participation in the development of the country, while achieving a comprehensive and interdisciplinary training that enables them to interact with the public or private administration. This educational system is geared towards a solid humanistic culture, while scientific and research oriented and of support to the naval spirit that promotes leadership, educational self-management and development of skills to facilitate the adaptation of knowledge to the continuous transformations of science and technology, with emphasis on the observance and respect for human rights and international humanitarian law " (Naval Educational Model XXI Century, 2006, p. 95).

4.1.2.3 Organizational model of Military Higher Education in Mexico

Thru the development of this research we can stress that the military education system is part of the national education system. However, it is governed by its own law. Such law regulates and stipulates the types, levels and modalities of military education institutions where the military educational process occurs. In colleges, schools, study centers and school units higher and medium-higher education and training is provided.

Regulation of LEMEFAM, Article 69 stipulates that education at higher level is taught after having completed high school, or its equivalent or terminal technical option, and includes the

following levels:

In secondary education:

I. Superior University Technician; Short Professional Career and Cumulative Education or equivalent aimed at obtaining a bachelor's degree;

In tertiary education:

II. Bachelor; III. Specialty; IV. Master degree; V. Doctorate.

On the other hand, studies of secondary education are required to demonstrate basic education for military purposes, in order to comply with Article 37 of the General Law of Education. Upon completion of this level access to higher education or equivalent technical options are open.

Regarding to professional training military education includes courses that respond to the needs of preparation for duty, processing, actualization and specialization in the performance of specific functions or to complement other courses of any type or level.

Regulation of LEMEFAM, Article 73 specifies the modalities for the delivery of military schooled and non-schooled education -open, distance, virtual, or mixed. Never the less there is no public access to documentation related to the current specific pedagogic methods used in the military education in Mexico. This information is reserved for those higher up in the hierarchy of the military education, such as the academic oligarchy of the armed forces.

Garduño (n.d.) has identified the military career path, which is based on a pyramid that is based on detailed in the following table nests.

Table1. Hierarchical classification of Mexican Armed Forces

Hierarchy	Army and Air Force	Navy of Mexico
<i>MANDOS (Comand)</i>	General de División	Almirante
	General de Brigada o	Vicealmirante
	General de Ala.	
	General Brigadier o General	Contralmirante

	de Grupo	
<i>JEFES (Chief)</i>	Coronel Teniente Coronel Mayor	Capitán de Navío Capitán de Fragata Capitán de Corbeta
<i>OFICIALES (Officer)</i>	Capitán Primero Capitán Segundo Teniente Subteniente	Teniente de Navío Teniente de Fragata Teniente de Corbeta Guardiamarina 1er. Contramaestre 1er. Condestable 1er. Maestre
<i>CLASES O TROPA (Troop)</i>	Sargento Primero Sargento Segundo Cabo Soldado	2º. Contramaestre 2º. Condestable 2º. Maestre 3er. Contramaestre 3er. Condestable 3er. Maestre. Cabo con sus especialidades. Marinero

Source: Garduño (s/f). (Modified and translated partially for this research)

Depending its contents and objects of knowledge, in the military education exists a professional military route (Table 2) designed according to the level of information that a specific duty demands. In other words, every rank and degree are related to access to different levels of information and authority necessary to the development of their activities.

Table 2. Professional route of military education system of Mexico

Hierarchy and objective	Army and Air Forces Educative Institutions	Navy of Mexico Educative Institutions
<i>Clases: are in charge of: (Troops) Training of Second Sergeant.</i>	Escuela Militar de Clases de las Armas(Military school of weaponry):	

<p><i>Training of First Sergeant.</i></p> <p><i>Training of specialized technicians.</i></p>	<p>Basic level</p> <p>Advanced level.</p> <p>Escuela Militar de Tropas Especialistas(Militar school of specialized Troops)</p> <p>Escuela Militar de Clases de Transmisiones(Military School of Transmissions Class</p>	<p>Basic and advanced level operative and administrative training courses.</p>
<p><i>Officers: are in charge of:</i></p> <p><i>Formation of new officers after graduation as lieutenants</i></p> <p><i>Formation of specailists in military core areas</i></p> <p><i>High responsibility training and preparation</i></p>	<p>Heroic Military College and Air College</p> <p>Formation Curse</p> <p>Basic course of tactical and administrative appliances</p> <p>Advanced curse of weaponry and service</p> <p>Military Nursing School</p> <p>Military School of Healt Officers</p> <p>Military School of War Materials</p> <p>Center for Studies of the Army and Air Force</p>	<p>Heroic Naval School</p> <p>Center for Higher Naval Studies.</p>
<p><i>Jefes(Chiefs): are in charge of the:</i></p> <p><i>Formation of Higher Rank professionals</i></p>	<p>Higher School of War</p> <p>Professional Schools:</p> <p>Medicine</p> <p>Odontology</p> <p>Transmissions engineering</p> <p>Military Engineering etc.</p>	<p>Centre of Higher Naval Studies</p> <p>Professional Schools</p> <p>Naval Medicine</p> <p>Navy Air Pilot</p> <p>Naval engineering etc.</p>

<i>Preparation for the exercise of Chief functions and promotion</i>	Higher State Diploma	Course of the Navy Higher State
<i>Mandos: Commanders: are in charge of:</i> <i>Preparation for the exercise of command and promotion to higher ranks</i>	National Defense College: Master degree for the Security and National Defense Informative courses for Generals	Centre of Higher Naval Studies Course of High Command and National Security Actualization System for Commanders.

Source: Garduño (s/f). Translated and modified from Spanish for this research.

Most centers and schools of military education have close relationships with each other, through the University of the Army and Air Force, as well as the Center for Advanced Naval Studies, by agreement between the addresses of those Ministries of Education.

Additionally, there are exchanges of experiences and courses with other military academies of the world, which has meant that there are a significant number of national scholars trained in these centers. Also, military educational institutions of Mexico welcome representatives of other nations in their courses. Military education is imparted not only by members of the Army or the Navy. It may be the case that some civilians are called to military education system, depending on the type of content required. An interesting fact is that most teachers of National Defense College nowadays are civilians coming from the private and public service sectors. This can be a reflection of the increasing power and influence of such sectors in the military higher education system.

The professionalization of National Armed Forces is due to great extent to the military education system. Who has been created to underscore the importance of discipline, conformity to law, and obedience to higher authority. Among the main objectives of military education is to instill in officers deference to civilian institutions and to discourage any notion of military interference with the functioning of the state. In other words not to interfere with the civilian life of a nation unless national defense is necessary. Therefore instruction on

political, social, and economic topics are not the main focus of curricula, maybe to discourage heightening the officers' political consciousness or social awareness. Although such limited and restricted education does not apply, however, to the most senior level, the National Defense College. Which means that the upper the hierarchy the wider the spectrum of knowledge received.

In the first tier of professional military education the entrants range from fifteen to nineteen years old. The training is physically demanding and rigorous. Students are deliberately left with very limited free time. Cadets who complete the four years of training are considered to have achieved the equivalent of a preparatory school education.

Graduates of the four-year army curriculum attain the rank of second lieutenant and usually become platoon or section commanders, after spending three years with tactical units. Young officers then may be designated to attend any of the applied schools for advanced training in infantry, artillery, engineering, support services, or cavalry. Graduates of the Air College who select a flight or ground support orientation in their course work receive the rank of second lieutenant as pilots, general specialists, or specialists in maintenance and supply. Cadets completing studies at the Heroic Naval Military School are commissioned as ensigns prior to service with the naval surface fleet or in naval aviation or the marine infantry. (www.globalsecurity.org)

In case the rating achieved is high, an army officer may be promoted to first lieutenant after two years and remains at that rank for a minimum of three years. "The officer can resign his commission after five years or, after passing a competitive examination and being favorably evaluated, may be placed on a promotion list for second captain in order of his test score. Similar requirements must be met for advancement through the rank of lieutenant colonel. The minimum service time is eight years to reach first captain, eleven years to reach major, and fourteen years to reach lieutenant colonel." (www.globalsecurity.org)

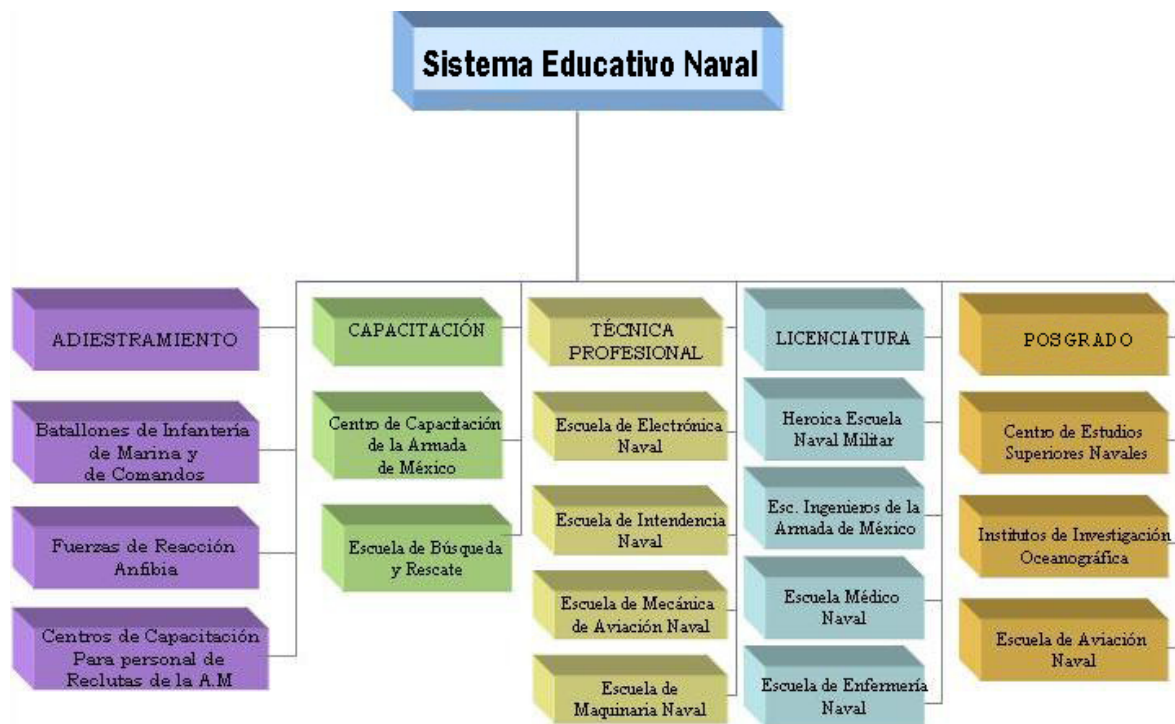
On the other hand first and second captains who are able to meet selection standards may be admitted to the Superior War College or, in the case of naval officers, the Center of Superior Naval Studies. "The Superior War College offers a three-year program for army officers and a two-year program for the air force. The equivalent naval course is three years. Course work emphasizes preparation for command and staff positions, including the study of administration, strategy and tactics, war gaming, and logistics, as well as more general

subjects, such as military history, international law, and foreign languages.”
(www.globalsecurity.org)

In the Superior War College about half of the entrants complete the full three years, and only 7 percent of the officer corps are graduates of the college. Those completing the course successfully receive the degree of Bachelor in Military Administration (*Licenciado en Administración Militar*) and the title of General Staff Graduate, which is used with one's military rank and commands and implies some prestige. Graduates also receive a stipend of between 10 and 25 percent of their salary during the remainder of their active duty.
(www.globalsecurity.org) That means in matters of military education that the higher the education level, higher the income of soldiers. In other words there is a direct correlation between educational level and income of military personnel, due the stipend the graduates receive after completion.

The National Defense College is the top and culmination of professional military education at national level. Enrollment is offered to a select group of senior army colonels and generals and their counterparts in the air force and navy. Its education is formed by one-year program which includes advanced training in national security policy formulation, resource management, international relations, and economics. In order to fulfill the requirements for graduating, officers are required to write a thesis involving field research on a topic involving national security, politics, or social related problems. The graduation from the college does not bring immediate promotion but according to globalsecurity.org most of the generals reaching the highest positions in the military hierarchy are alumni of the college. This can be another indicator of a direct correlation between level of education and military hierarchy. Regarding the organizational model of naval education system, it is administered by the Administrative Office of the Navy through the General Office of Naval Education. It has an in-school system and other out-of-school. The school system has courses on two levels, upper-secondary and tertiary. (See Figure 1) The latter comprises the graduate and specialties, for which there are schools of the Navy itself as well as links with civilian and military institutions, whether domestic or foreign, in the case of specific courses are not offered at the naval education system. Mexican officials nowadays are attending military schools both in Latin American and European countries. Comparatively, Mexico sends fewer officers to U.S.; however, the Mexican armed forces use American materials training and military doctrine due the great influence of the United States of America in modern military.

Figure 3. Academic Levels of Naval Education System



Source: Secretaría de Marina. Dirección General Adjunta de Educación Naval.

According to the Naval Educational Model Century XXI (2006) , and from the regulations is established on its the regulatory framework, it can be said that the relationship between the education process in the Navy and the national education system is quite open and comprehensive by establishing a compatibility with the National Development Plan and the National Education Programmes. Nevertheless there is no existent available data to corroborate the efficiency of such compatibility in a comparative way.

5 Summary and Conclusions

5.1 Introduction

Although the availability of data and or studies related to the field of military education in general and military higher education in particular as such is scarce and information almost inaccessible due the intrinsic nature of the studied matter, which most of the time is restricted because of national security reasons. Thru the present research we were able to provide a comprehensive general and limited portrait of the military higher education and of its core elements in the Mexican context. Hence we can say that military professional education is designed to ensure that its members internalize the doctrine that makes members to appropriate goals, beliefs and forms of authority. In other words military education main objective is to make students to embrace the values of the institution and therefore their goals and institutional culture . For some authors (Garduño, n.d.; Clark, 1983), beliefs are core values of a professional military education institution and of a higher education institution, this represents more than a simplistic repetition of precepts, since belief in these values is critical to sustain along lasting institutional effort. In the case of civilian higher education, and an activity that demands often risking self integrity and own life, when speaking of the military higher education.

Moreover, military education and military higher education facilitates insertion of its members in the field of discipline -which we identified as another core value of military activities-, thru specific knowledge provision, through curricula specifically designed to organically respond to the needs that the military service tasks impose.

Other relevant goal of the military higher education is to strengthen two basic principles in the military: unity of effort and unity of command (Lawrence, 1995), which implies recognition of the hierarchical structure to determine responsibilities and consequences of decisions to achieve a common shared goal or objective, as...

Without a clear chain of command a clash of wills can result causing a corrosive effect and stagnate progress in the non-kinetic arena. Unity of effort implies that the entities working in an area agree on the direction, but this is not always the case. Unity of

command denotes that a single commander is responsible for operations and when a decision is made on a direction all entities *must* move along that path (...) (...) A clear command relationship placing one individual in charge of an area could help remedy the problem of disunity of effort. (Forsyth, 2011, p.4)

Therefore we can acknowledge that the fact of using the military for civilian internal security purposes can cause the fragmentation of the unity of effort and unity of command, and subsequent failure on achieving the current missions but also pre-existing goals and objectives, due the lack of a clear operative framework and coordination between civilian authorities and personnel and military authorities and troops, which can engage them into a conflict of leadership, control and legitimization and subsequent failure to accomplish their missions of military activities in internal security affairs. Thus military higher education needs to address such an issue thru curricular changes and foment awareness within the military organizations of the difficulties the armed forces might face by engaging in national internal security missions.

Another exclusive feature of military higher education we manage to identify is related to the way the arms career develops, imposing as a pre-condition for promotion the professional education of active military cadres, which becomes a criterion for promotion to various levels, ranging from “foot soldiers” and officers, to chiefs and commanders. In other words the military rank is related to the education level and not only to service achievements. It is considered that, since the eighteenth century, the military education is playing an ever more professional and institutionalized role to conform armies or armed forces subject to a single regulation (Hernández, 2007). In other words, military professional education and armed forces, share a common discipline, its own jurisdiction, a form of regulated life and a particular style in the course of their work or a set of principles for making war. These changes occurred in the political context of the formation and consolidation of modern national states. Prior to this, the military exercises were based on individual skills and abilities at the service of a nation. However, between the eighteenth and nineteenth centuries, a broad process of institutionalization and rationalization of the war and its means strongly influence the strategy and tactics in the composition and order followed observed by the armies and the use of technological elements that set standards in the development of the fighting.

5.2 Findings

According to the literature used for this research we were able to identify the following general findings related to the Mexican military higher education system.

a) The military higher education has the imperative mission to train and prepare highly qualified and dedicated individuals for the service in the armed forces. Such education should be for a precise number of selected individuals, and according to subject performance profiles (Garduño, 2008). They are educated to master in the use of lethal force, obedience and service to the state. Life of soldiers and the predisposition from army members to the possibility of being killed in combat or during the exercise of objectives and tasks is an asset exclusive of the professional education of armed forces.

k) The military higher education system in México can be described as a binary system: as Campbell and Rozsnyai, (2002, p. 132) defined Binary (or dual) system: When higher education is offered in two separate and distinct types of institutions universities and non-university establishments.

c). The military higher education does not address the typical problems of other educational structures, such as saturation of graduates, poor graduation efficiency or lack of open positions in the workplace for which they were educated. The creation of a profession or specialty in the military education is in accordance with the demands and contextual requirements of the arm forces (Garduño, 2008).

b) For its intrinsic peculiarity, military higher education is not driven by a criteria of mass education, or pursuing saturation of profession. In military higher education governs criteria of “high selectivity” according to specific profiles. In the military higher education institutions strategic planning is a basic characteristic of their enrollment policy as the number of selected elements is intended to match the number of graduates. Where those elements considered prone to defection are expected to be excluded by the elite selection process.

d) In contrast to traditional higher education systems where education finishes once the student has graduated, in the military system, education is permanent while its members are active in the armed forces. Military professional education is permanent.

e) The military education has its own system of certification and accreditation standards, unrelated to other non-military structures, but hinged to supply civilian professionals in courses that are considered relevant for the nation.

f) Gender equality in the military higher education, is more unequal towards women than civilian higher education system, due to the discriminatory enrollment criteria of the military education and armed forces in general. There is only a 7% of female participation in the armed forces. Transparencia Presupuestaria México (2012).

g) The tax payers and civilian society in general have no access to relevant data about the current state of the military education in general and of military higher education in particular due to the strategic nature of the military activity.

h) There are no quality assurance institutions or organizations in charge of certifying, assessing and measuring the evolution of the military higher education institutions, in order to control minimum quality standards in the military education. Nevertheless the supervision and control of activities are executed in a top-down-down-top hierarchical manner. In such system the lower rank communicates and accounts for the outcomes to the immediate higher rank and so on. The top upper ranks in the hierarchy provide commands to the immediate lower ranks and so on.

i) The Ministry of defense, in the figure of a Secretary of National Defense, is the top authority of the military education system unlike civilian education where the top authority in education is the Ministry of education.

j) The enrollment process is designed for exclusion of members of society considered not apt or capable for the service of the armed forces. Among entry requirements to military higher education institutions we can find restrictions such as age, corporal height, health and physical condition, specific and general knowledge, psychological capabilities, gender, nationality, etc.

5.3 Interpretation of Findings

After the examination of the information and data gathered during this research we can say that the Mexican military higher education is an independent elite binary sub-system of the national public higher education sector conformed by diverse elite military tertiary education institutions which have two main missions: One is to professionally train and educate students into the master of the necessary theoretical and practical knowledge required for the fulfillment of the regular duties of armed forces and specific missions. And second, to indoctrinate the members of the army into the values and beliefs of the armed forces.

The military professional education sub-system is of a particular character, as the educative organizations that constitute the military higher education have no institutional dependency on the Ministry of Education unlike all tertiary education institutions in Mexico. This characteristic is due the fact the military education is organized and administrated through two different public entities of the armed forces. In one hand we have those military higher education institutions dependent of the Ministry of National Defense (*Secretaría de la Defensa Nacional*) and in the other hand we have those dependent of the National Navy(*Secretaría de Marina Armada de México*).

The military higher education institutions dependent of *Secretaría de la Defensa Nacional* are under the immediate control of *Dirección General de Educación Militar* (*General Directorate of Military Education*) and *Rectoría de la Universidad del Ejército y Fuerza Aérea* (or Rector Office of the University of the Army and Air Force) .This tier of the military higher education is represented by the Army and Air Force University which is comprised of several professional colleges, professional military schools and military study centers described in previous chapters.

The military higher education institutions dependent of *Secretaría de Marina Armada de México* and under the immediate control of *Oficialía Mayor de Marina* (or Navy Mayor Office and of *Dirección General Adjunta de Educación Naval* (or Directive board of Naval Education). This tier of profesional military education is divided in The technical professional education institutions and the professional education institutions also described previously.

These organic independence of the military higher education sub-system from the authority of the Ministry of Education, provides a legal buffer, wich allows a great degree of autonomy

within the military higher education institutions. The detachment from the Ministry of Education also is acting as a bureaucratic barrier for public scrutiny, affecting transparency of the armed forces education. We need to remark that the top authority of the Mexican armed forces and armed navy by constitutional mandate is the President of Mexico, consider the Supreme Commander. The executive power of Mexico is represented by constitutional mandate by the President of the republic also. Therefore we can affirm that the military forces are part or an extension of the executive power of the republic. This simple fact grants the military forces a great degree of independence from other constitutional powers –legislative and judiciary. Consequently the Ministry of National Defense and the Ministry of Armed Navy are extensions of such executive power although the President of the republic even considered Supreme Commander, in fact he is not an active part of the military organizations he leads. This creates a gap in the administrative control over the whole military structure including the education aspects. Hence a great level of secrecy and lack of open public accountability, and transparency can be considered intrinsic characteristics of the military higher education in Mexico due to constitutional design of the state structure.

Trow (1973) conceptualized three models of participation in systems of higher education: elite, mass and universal according to the percentage of national coverage rates in the whole education system. In the case of the Mexican military higher education statistical data is not available. Nevertheless coverage percentages are not the only way to categorize if a higher education system is elite, mass or universal as Trow (1973) also conceptualized several indicators, useful for the classification of higher education systems and institutions. Based on such concepts, the Mexican military higher education sub-system can be described as of an elite character due to the following identified characteristics specific to the studied matter:

- 1) *Attitudes to access*: military professional education and training is seen as a privilege and not as a social right as is the case of civilian public education.
- 2) *Functions of higher education*: Shaping the mind and character of ruling professional military class, which is also prepared for elite roles. From private to general, the military rank is directly related to levels of study achieved and active performance.
- 3) *Curriculum and forms of instruction*: Highly structured non-flexible and focus in specific fields necessary to the military activities. Discipline is a core element.

4) *The student “career”*: The military students of higher military education have a stipend and receive a rank promotion and salary increase after graduation. Graduates are required to be on service for a compulsory time.

5) *Institutional characteristics*: Highly homogeneous with similar common standards. The military live in specific residential areas while on service, with clear and restricted boundaries.

6) *Locus of power and decision making*: Hierarchical top-bottom distribution of power with a specific protocols in the lines of command, shared values and obedience based on assumptions and delegation of responsibilities. In the Mexican military, professional education is seen as a privilege to serve the country and not as a basic social right.

7) *Access and selection*: Highly selective, discriminatory and meritocratic. The Mexican public military higher education sub-system has rigorous enrollment criteria, which has been created and designed for the detection, selection and exclusion of those considered apt or not for developing a career in the armed forces.

8) *Internal governance*: Hierarchical, and determined by rank, education level, performance and time of service. Mexican military higher education also counts with academic councils although following a hierarchical unity of command.

At present , there is some consensus on the challenges imposed on the times the armies of the world , especially regarding the claim of highly flexible structures , the use of innovative technologies and the existence of scenarios that represent new risks. This modern scenarios requires the skills of the military corps to consider more and more relevant the professional military capacities beyond the number that an army force may have. In this context, military higher education is necessary for the development of new tasks condition.

The theme of technology and professional education has been on the agenda of the armed forces for a long time. Dueñas (1997) wrote that the development and adaptation of the Professional Military Education (PME acronym, coined by the U.S. military) is a subject of immense importance, as it has to anticipate and try to recognize the environment of a future conflict or war, and determine how to achieve new standards required for the soldiers of this century to perform effectively their tasks.

The author argues that the PME is conceived as the formation of the soldier under three parameters or fields of knowledge: a) ethics, culture and core values for the service, b) the technical skills and tactics for waging war and c) wisdom and judgment to apply that knowledge in a revolutionary military environment. In these terms, new capabilities, roles and missions are required (Dueñas, 1997).

Thus, the professionalization and technology that are currently digitizing the battlefield, continues moving ever faster, making those military forces with poor professional military education vulnerable to those who have the necessary training to use it. Data management is essential to position forces, destroy targets and perform any critical task of military operations (Hernández López, 2007). The technology, information and professional education, therefore, have become an indispensable tool in all military activities and institutions of professional education in the military must take responsibility for preparing future soldiers. In this context, the centrality of the national defense mission as main reason of being of the military forces, has been reformulated and gradually relegating the traditional military objectives, in order to deal with internal security conflicts during peace times, as domestic problems have been widely exceeding the capacity of the state and its civilian institutions, exposing the failure of the civilian security forces and police to deal with them. In such scenario Mexican government resorted to the military, to combat organized crime, mainly related to drug and human trafficking. In this case, the challenge of the military is to act professionally on a scenario for which they were not specially prepared, plus the lack of an adequate legal system to reinforce military actions among civil society under the argument of national security. If we consider that;

Organizational adaptation refers to modifications and alterations in the organization or its components in order to adjust to changes in the external environment. Its purpose is to restore equilibrium to an unbalanced condition. Adaptation generally refers to a process, not an event, whereby changes are instituted in organizations. Adaptation does not necessarily imply reactivity on the part of an organization because proactive or anticipatory adaptation is possible as well. But the emphasis is definitely on responding to some discontinuity or lack of fit that arises between the organization and its environment (Cameron, 1984, p. 123)

Therefore we can say that higher education in the military forces, just as in the civilian higher education system, needs to be prepared for the changes in the environment, and consequently respond to the endless necessity of adaptation to modern times.

Finally we can just briefly account that in military higher education in Mexico the presence of independent quality assurance institutions monitoring their educative activities is non-existent. While the internationalization of the military higher education is a ongoing process: Although military higher education for foreigners is restricted, there are some courses about specific knowledge and professional training specially designed for bilateral agreements of exchange students from other friendly national armies in the region.

5.4 Limitations of the study

A number of caveats need to be noted regarding the present study. The most important limitation lies in the fact that the studied matter of this project was far less accessible than expected; hence the availability of data for the studied *phenomena* was scarce in some cases, not existent in others; or inaccessible because of military confidential institutional policies. Due this reason the results of the research were mainly based on secondary data, thru available institutional documents, articles, norms and by-laws, which because of their documentary character; data might not necessarily represent the reality of the studied *phenomena*; while the analysis of numeric information was limited to the utilization of percentages, proportions and relative frequencies when required. Another important limitation is the fact that this study is context specific; and caution must be applied, as the findings might not be necessarily fully descriptive of the military higher education in general as the present study reflects partially the reality of the Mexican military higher education organizations from a theoretical perspective and under its own and very specific environment.

5.4.1 Implications for the future

The relevance of the study of the military higher education is evident, not only because of its public character, which implies the necessity of transparency in the use of resources, human and economic, but also because of the current Mexican context that demands every time more and better prepared soldiers capable to deal with internal security task previously reserved to civilians. Unfortunately the Mexican armed forces, lack of a clear legal framework to legitimize its operation in tasks of public safety (Arzt, 2010). The public administrations of Ernesto Zedillo (1994-2000), Vicente Fox (2000-2006), Felipe Calderón (2006-2012) and Enrique Peña Nieto (2012-201?), conceived such military involvement, of national armed forces in internal security tasks as temporary and transiently rose. The organized crime corrupting power, lethal force deployment, use of violence and institutional penetration has permeated structures of the local Mexican state and police. These contexts have prevented the return of military forces to barracks. Nowadays military presence persists in the streets of urban areas, rural communities and in several regions of the country. Considering that there is a deficit regarding civilians trained and experienced in carrying out public security tasks; military personnel also has been appointed in posts of strategic areas of the Law Enforcement National Office (Procuraduría General de la República). The use of the army to provide security and perform tasks that have traditionally been reserved to civil officials; can endanger the military system, as...

The use and abuse of military authority corrupts the meaning of the military institution, truncating the military career of those military elements who perform public safety duties, while dangerously exposing the national armed forces also to be flank of the corrupting capabilities of organized crime, as it has happened with municipal, state and even federal police forces, weakening and placing in jeopardy the protection of the Mexican state " (Arzt, 2010, p. 247).

Hence in this scenario of rapid changes is necessary that the army professional education to be ready and more dynamic to provide enough professional trained soldiers, up to the demands of a fast changing society.

The description made by Clark (1970) about certain civilian higher education institutions referred as “organizational legend (or saga)”(...) match also with some of the characteristics inherent to the Mexican military higher education institutions as they are “ located between ideology and religion, partakes of an appealing logic on one hand and sentiments similar to the spiritual on the other” (p.235) It is pertinent to notice that in the military higher education institutions have as a core objective the development of a spiritual life and in accordance with the highest interest of the Nation where obedience and discipline are fundamental. This type of institutions might develop “over time such intentionality about institutional life, a saga, which then results in unifying the institution and shaping its purpose” (p.235). While adding:

It might consist of long- standing practices or unique roles played by an institution, or even in the images held in the minds (and hearts) of students, faculty, and alumni. Sagas can provide a sense of romance and even mystery that turn a cold organization into a beloved social institution, capturing the allegiance of its members and even defining the identity of its communities. (Clark, 1970, p.235)

Therefore we can affirm that the military higher education in Mexico is as complex as the civilian higher education system where values, beliefs, endemic culture, organization, governance and identity (Clark, 1979) play a decisive role on the constituency and internal characteristics of the educative system as a whole. And if the characteristic of some institutions in the civilian higher education are to some extent similar to those in the military higher education, or *vice versa*; The diagnostic made by Kent (1993) about the Mexican Higher Education system is worrying when affirming “The Mexican system of higher education, which has developed in the absence of any real assessment culture, finds great difficulty in promoting genuine evaluation procedures and in avoiding a 'culture of compliance' and the consequent bureaucratic games” (p.81). Although there is no data or studies establishing if the Mexican military higher education sub-system reflects the same endemic institutional culture as the civilian higher education system; it is prudent to wonder if that is the reality of the military higher education sub-system as well. Thus the elite saga

characteristic of the military higher education in Mexico can be a positive or a negative factor, depending on its current estate, as that would imply a great difficulty to promote effective dynamic change and subsequent controlled evolution within the military higher education.

One more issue that we identify thru this study is the existence of a remarkable paradox between the national modern state democratic values and the behaviour of the public military higher education organizations. First: The Mexican Constitution forbids any kind of human discrimination because of "ethnic origin, national, gender, age, disability, social status, health status, religion, opinions, sex preferences, marital status or any other that undermines human dignity and has the effect of nullifying or impairing the rights and freedoms of individuals"(20011, Art.1). Second: The Art. 1 Bis. of the *Ley de Disciplina del Ejercito y Fuerza Aerea Mexicanos* (Military Discipline Law) states that the military career demands from their members the execution of duties up to a sacrifice stage, by giving priority, even over personal interest, to the respect of the Political Constitution. Third: In Article 1 of the Military Service Act is stated that the armed service is mandatory for all citizens. However, Article 10 of the same Act states that military regulations will decide the causes to exclude individuals –totally or partially-, from the armed service, by taking into account a set of impediments from physical, moral and social order while in charge setting the ways for checking them. As a consequence of the implementation of such a law the higher education military institutions in their admission policies and process include several discriminatory conditionants for access. This creates not only a legal contradiction, between basic constitutional precepts and mandates in one side and the military legislation and internal regulations of professional military education organizations in the other; but also a paradox between the values to be defended, those constitutional, and those shown by the military higher education discriminatory organizational model and behaviour shown.

From our perspective seems that the constitutional modifications in support of no discriminatory practices, have been not harmonized with the military legislation and therefore not enforced by the state and by the military educative institutions. The reasons for this can be diverse. Nevertheless this kind of organizational discrepancies can result in the weakening of the state institutions and its values, as they make to some extent evident that the rule of law is weak while the strength of the national government to enforce legal changes,

thru all the system compromised, by lacking the capacity of a homogeneous implementation of basic principles and values of the national state, at national level.

5.4.2 Implications for research

This study is one of the very few done by civilian academics about military higher education organizations in Mexico. And even though our findings are relevant for the subject, they are context specific, and limited.

Therefore further several qualitative and quantitative research must be done by the civilian society to grant an unrestricted access to the results, in order to produce relevant knowledge to contribute on the understanding of the studied matter and of higher education in general.

Thus further research of all elements constitutive of the military higher education in Mexico from access, curriculum, forms of instruction, student and teachers performance to institutional characteristics, power and decision making, access and selection, internal governance to internationalization process, gender issues etc. is necessary to be done.

Below we recognize some.

Recommendations for future research:

- Qualitative and quantitative longitudinal research of policy implementation within military higher education institutions in order to measure and track in time improvement or regression of the studied organizations.
- Qualitative and quantitative research of perceptions and practices of military higher education derived from policy from a pedagogical and curricular dimension.
- Qualitative and quantitative longitudinal research to investigate the relationship between academic performance and military objectives accomplished, in order make

possible to know and compare the academic impact of the military education by their academic outcomes in the fulfillment of their duties.

- Qualitative and quantitative research to find out what are the main steering forces in the military higher education.
- Qualitative and quantitative research to study the relationship between economic resources, academic outcomes, and accomplishment of missions and objectives.

Although the present research was not focusing *a priori* on a specific field of knowledge within the organization of the Military Higher Education, but into its general characteristics; we manage to identify that this sub-system of education – the military- , can be one of peculiar interested for those focusing on the study and research of the institutional beliefs and values also referred as *academic culture* (Maassen, 1996)- which is a broader concept-, and how such culture can affect and influence the educative organization internally, as this sub-system, has notorious visible differences in matter of values, beliefs and missions, when contrasted with those of civilian higher education organizations. Considering that “academic culture is the set of attitudes, beliefs and values that integrates a specific group of academics”(Maassen, 1996, p.158), we can say with no doubt that the military higher education is a fertile field for researchers on the quest to produce more knowledge on the dynamics and understanding of academic culture in higher education organizations.

5.5 Final Thoughts

This brief study it is a humble effort to provide a basic snapshot of the Mexican military higher education and results a reminder of the great relevance of making in times of peace, an uncompromised and constant research leaded by civilians, about the military professional education. The necessity of producing abundant knowledge about the military higher education sub-system is real. The military professional education still remains as an invisible

part of the public education system due the intrinsic characteristics of the military sector which is isolated and organized outside the civilian spheres. The military education is funded with public resources and as part of the public education sector, is highly relevant to produce data and long-lasting research made by civilian society - so it can be accessible-, for the better understanding of the military higher education organizations, and consequently of the army in general.

One more reflection drove us to consider that perhaps is time for the military higher education sub-system to pass from being an elite type of organizations to a mass type within the military sphere and military population. By eliminating such discriminatory precepts in the selection process, which are an obstacle for inclusion in the military professional education of a wide range of the population. So individuals that currently are automatically excluded because of non-academic reasons –gender, physical height, medical tests, etc.- can have access to military higher education if that is their decision, this will foment and promote democratic values, diversity, tolerance and solidarity within the military and with the nation citizens, while increasing exponentially the spectrum of people that can be part of the armed forces.

It is fundamental in strategic terms for modern states to acknowledge if the national armed forces higher professional training and formation are suitable, properly designed and performed according to the necessities of society and consequent with the national and international law. Especially in countries like Mexico where the military forces are assuming local security tasks among civilians on a daily basis. It is necessary to make of this invisible public educative sub-system a visible one through research for the benefit of society and military institutions.

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