



Management of the Faculty of Administrative and Economic Sciences of the Technical University of Manabí, Ecuador, from the perspective of the learning organization model (Intelligent organizations)

Gestión de la Facultad de Ciencias Administrativas y Económicas de la Universidad Técnica de Manabí, Ecuador, desde la perspectiva del modelo de organización del aprendizaje (organizaciones inteligentes)

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ABSTRACT:

This research analyzed the management of the Faculty of Economic Science at the Technical University of Manabí, Ecuador based on Senge's Five Disciplines. The Sample consisted of 82 professors. The instrument to gather the data was a questionnaire. Results revealed that most of them perceived the Faculty as a Learning Organization. As a conclusion outstands the need to deepen through future researches the study of those disciplines that received negative rankings such as Shared Vision, Mental Models and Team Learning.

Keywords: Faculty of Administrative and Economic

RESUMEN:

Esta investigación analizó la administración de la Facultad de Ciencias Económicas de la Universidad Técnica de Manabí, Ecuador, basada en las Cinco Disciplinas de Senge. La muestra consistió en 82 profesores. El instrumento para recopilar los datos fue un cuestionario. Los resultados revelaron que la mayoría de ellos percibía la Facultad como una Organización de Aprendizaje. Como conclusión, se destaca la necesidad de profundizar a través de investigaciones futuras sobre el estudio de aquellas disciplinas que recibieron clasificaciones negativas como Visión compartida, Modelos mentales y

1. Introduction

Peter Senge indicates that even though, in principle, his model of learning organizations focuses on companies and their managers, it came up that the basic disciplines in the model such as Systems Thinking, Personal Mastery, and Shared Vision are also relevant to professors, public administrators, government officials, students, among others. That is because all occupy or could occupy leadership positions and could be part of organizations in need to exploit their potential through the development of learning capabilities.

Senge (2005) states: "It is no accident that most organizations learn poorly. The way they are designed and managed, the way people's jobs are defined, and, most importantly, the way we have all been taught to think and interact ... create fundamental learning disabilities. These disabilities operate despite the best efforts of bright, committed people. Often the harder they try to solve problems, the worse the results. What learning does occur takes place despite these learning disabilities for they pervade all organizations to some degree."

The transformation of a company into a learning organization is a leading necessity since its conformation that would allow (Gillezeau, 1999), among other things, meeting difficult challenges through knowledge, pursuing full satisfaction of customers as a basis for corporate wealth, making the organization live intensively its spirit of service, courtesy, and harmony. It would constantly allow maintaining creativity and innovative spirit, discarding the culture of waste, and always achieving the proposed objectives while ensuring the quality of the products and offered services, serving the collaborators, customers and suppliers of the organization with qualified and trained staff as well as keeping it motivated for having excellent leaders.

In this context, the objective of this research is to analyze the management of the management of the Faculty of Economic Science at the Technical University of Manabí, Ecuador, from the perspective of Senge's Five Disciplines model of learning organizations.

The importance of this study constitutes an important input to formulate a management proposal for this academic instance, in which the five disciplines proposed by Senge are strengthened: Team Learning, building a Shared Vision, Systems Thinking, Mental Models and Personal Mastery. From the aforementioned, it can be reversed in a better quality of the education given in the institution and consequently better quality of the graduate and the work environment in the University.

From a theoretical/methodological point of view, this work represents an interesting research proposal by which other faculties at the same university and other higher educative institutions can be evaluated.

2. Learning organizations

Senge (2005) defines a Learning Organization as:

An organization which learns and continually expands its capacity to create its future. For such an organization, it is not enough to survive. "Learning for survival", often called "adaptive learning", is important and necessary. However, a learning organization combines adaptive learning with generative learning, a learning that increases our creative capacity (p.24).

Senge (2005) states that generative learning cannot be sustained in an organization if what people think is only oriented to solve problems related to immediate events. If we concentrate on this, at best, we can predict a fact before it happens to have an optimal reaction. Nevertheless, we cannot learn to create.

According to Giffort (1996), learning organizations promote broad rights and information for all, free teams, diversity, voluntary learning networks and limited corporate 'governance'.

Employees are free inside and outside of work; they own their tools and their creations. Competitive teams replace internal monopolies. Learning organizations are places where creating new knowledge is not a special activity; it is a way of being, where all people are knowledge workers (Nonaka and Takeuchi, 1998).

Learning organizations are based on the formation of high-performance teams. They are capable of effectively integrate perception, knowledge creation and decision-making (Chun Wei Choo, 1998), and, in the words of León, Tejada, and Yataco (2003), they constantly seek to ensure that all members of the organization learn and put into practice the full potential of their capabilities. That is, the ability to understand complexity, to acquire commitments, to assume their responsibility, to seek continuous self-growth, to create synergies through teamwork.

Arano Chávez, Cano Flores and Olivera Gómez (2012) define learning organization as the one that learns with change, has clear purposes, and knows that to achieve its objectives and goals, it requires to position itself in the market and have a defined strategic planning based on its mission and vision, where it is formulated, implemented and evaluated the situation of the company, taking into account the feedback of the process and the taking of systematic decisions.

Learning organizations, say Avendaño-Pérez and Flores-Urbáez, (2016), demonstrate the ability to learn, create knowledge bases or sets of routines, action guidelines or protocols to continue acting and evolving in an organic or self-controlled manner, as an adaptive process to face the strong change that they have to endure in their social environments and competitive markets.

The above definitions are summarized in the following table:

Table 1
Learning organization. Definitions and characteristics

Author(s)	Definition	Characteristics
Senge (1990)	It is where people expand their ability to create the results they really want, new forms and patterns of thinking are experienced, and people continually learn to learn together.	Creative Free of thought Individual and collective learning
Giffort (1996)	They promote broad rights and information for all, free teams, diversity, voluntary learning networks and limited corporate 'governance'. Employees are free inside and outside of work; they own their tools and their creations. Competitive teams replace internal monopolies.	Access to information There is freedom to form work teams and learning networks The governance has limits The employees own their creations Competitive teams are formed There are no internal monopolies
Nonaka and Takeuchi (1998)	Learning organizations are places where creating new knowledge is not a special activity; it is a way of being, where all people are knowledge workers.	The creation of knowledge is something natural and is part of their culture
Chum W. Choo (1999)	They are based on the formation of high-performance teams. They are capable of effectively integrate perception, knowledge creation and decision-making.	They have high-performance teams Integrate knowledge in decision making
León, Tejada, and Yataco (2003)	They constantly seek to ensure that all members of the organization learn and put into practice the full	Learning is collective Commitments and responsibilities are

	potential of their capabilities. That is, the ability to understand complexity, to acquire commitments, to assume their responsibility, to seek continuous self-growth, to create synergies through teamwork.	acquired Self-growth is promoted There are synergies Teamwork Understanding complexity
Senge (2005)	They learn and expand their capacity to create their future. They combine adaptive learning with generative learning, increasing their creative capacity.	Creative ability Creator of future
Arano Chávez, Cano Flores and Olivera Gómez (2012)	Learning organization learns with change, has clear purposes, and knows that in order to achieve its objectives and goals requires to position itself in the market and have a defined strategic planning based on its mission and vision, where it is formulated, implemented and evaluated the situation of the company, taking into account the feedback of the process and the taking of systematic decisions	Learn with the change It has clear purposes Clearly formulates its mission and vision There is feedback Make decisions systematically
Avendaño Pérez and Flores Urbáez (2016)	Demonstrate the ability to learn, create knowledge bases or sets of routines, action guidelines or protocols to continue acting and evolving in an organic or self-controlled manner, as an adaptive process to face the strong change that they have to endure in their social environments and competitive markets.	Learning ability Create knowledge bases Create action guidelines to evolve organically and self-controlled Adaptability to changes in the environment

Source: Self-made

As it is observed, there are several definitions that have been made of learning organizations since the 90s to the present day, however, except for some variants, it can be said that the common characteristics are:

Freedom to think and act.

Individual and collective learning capacity.

Adaptation to changes.

Work in high-performance teams or competitive teams.

Ability to create knowledge.

The foregoing implies that the top management of a learning organization must enable learning, share knowledge freely, and foster a culture of permanent innovation, relying on explicit, clear and written organizational policies with behaviors guided by example.

Closely related to this, Senge (2005) proposes five (5) disciplines or key aspects that an organization must have to be considered as a learning one, these aspects are presented below and will serve as a reference to analyze the management of the Faculty of Economics and Management Studies at the Technical University of Manabí in Ecuador.

3. Five disciplines to innovate in learning organizations

Senge points out that the five disciplines that he calls "component technologies" converge to innovate in learning organizations. Although he develops them separately, Senge indicates that each is important for the success of the others: "Each one provides a vital dimension for the construction of organizations with authentic learning capacity, apt to continually improve their ability to achieve their greatest aspirations" (p. 3). These five disciplines are: Systems

Thinking, Personal Mastery, Mental Models, Shared Vision, and Team Learning.

Systems Thinking requires disciplines concerning Shared Vision, Mental Models, Team Learning and Personal Mastery to realize their potential. The construction of a Shared Vision encourages a long-term commitment. The Mental Models emphasize the necessary openness to discard the limitations of our current way of seeing the world. Team Learning develops the skills of groups of people to look for a broader figure that transcends individual perspectives. Personal Mastery encourages continually personal motivation to learn how our actions affect the world.

3.1. Systems Thinking

This component or discipline refers to a conceptual framework and a body of knowledge and tools with which a learning organization must visualize all organizational processes as part of a larger system, which is interrelated and interacts with their environment through a frame relationship network. Systems Thinking allows the organization to solve deep problems and not only focus on isolated parts of the organizational system. Systems Thinking allows us to understand the new perception we have of the world and ourselves. At the heart of a learning organization there is a change of perspective: instead of being considered separate from the world, it is considered connected with it, instead of considering that external factors cause the problems, it is considered that it is their own acts that create the problems that are experienced. In a learning organization, people continually discover how they create their reality and how they can modify it.

3.2. Personal Mastery

Senge suggests that the term domain refers to a very special level of ability or ability to master an area of knowledge. People who have mastery of one or more areas of knowledge will be able to achieve consistently the results that matter most to them. Personal Mastery is the discipline that allows us to continuously clarify and deepen our personal vision, concentrate energies, develop patience and see reality objectively. As such, it is a cornerstone of the learning organization.

Despite the positive qualities that represent for any organization to have trained and specialized members to master an area of knowledge, Senge indicates that not all organizations stimulate their professional growth. It is very important that managers of learning organizations get interested in: the existing connections between personal learning and organizational learning, the reciprocal commitments between individual and organization and in getting a company constituted by people capable of learning until mastering an area of knowledge.

3.3. Mental Models

For Senge, Mental Models are deeply rooted assumptions that influence our way of acting and understanding the world. We are not often aware of our Mental Models or the effects they have on our behavior. Many perceptions about new markets or novel organizational practices are not put into practice because they conflict with our Mental Models. Senge also points out that the discipline of working with Mental Models begins by learning to evoke our internal images of the world to subject them to rigorous scrutiny. A learning organization is one that includes the ability to engage in open conversations where the inquiry is balanced (inquisitive attitude) with persuasion, where people express their thoughts to expose them to the influence of others. We assume that it also refers to avoiding that our Mental Models hinder new learning and the progress of the organization.

3.4. Shared Vision

Senge (2005) suggests that it is difficult to conceive an organization that has achieved certain greatness without goals, values, and missions deeply shared within the organization.

However, the author does not refer to the commonly heard formulation of vision, but to a genuine vision, in which people excel and learn because they want, not because they are ordered. The problem is that many leaders have personal visions that never translate into shared and stimulating ones, but are transmitted as a recipe book and revolve around an individual vision.

Senge considers that a Shared Vision, discipline four, is a set of guiding principles and practices. It allows the practice of Shared Vision to suppose aptitudes to configure Shared Visions of the future that propitiate a true commitment and not for obedience. By mastering this discipline, leaders learn that it is counterproductive to try to impose their vision.

3.5. Team Learning

It is known that teams can learn. There are examples where the intelligence of the team exceeds that of its members individually, and where the teams develop extraordinary skills to coordinate actions. When teams learn, they not only generate extraordinary results but their members grow faster.

The discipline of Team Learning begins with dialogue, the ability of team members to enter into a genuine joint thought. The discipline of dialogue also involves learning to recognize patterns of interaction that erode learning in a team. Defense patterns are often deeply rooted in the functioning of a team. If they are not detected, they undermine learning, if they are detected and made to flourish creatively, they can accelerate learning. Team Learning is vital because it is the fundamental unit of learning.

4. Five disciplines. Interaction

Senge refers to "discipline" as a theoretical and technical corpus that must be studied and mastered to put it into practice; it is a path of development to acquire certain skills or competencies. As in any discipline, anyone with the practice can develop a degree of skill. The practice of Senge's disciplines implies a constant commitment to learning.

The five disciplines of learning proposed by Senge, as he said, differ from the more traditional disciplines of administration because they relate to personal aspects such as ways of thinking, preferences, interactions and mutual learning. This encourages the construction of organizations, enhances the aptitude for innovation and creativity and allows the design of policies and structures through the assimilation of new disciplines.

For Senge, it is vital that the five disciplines are developed as a whole, and not separately because in this way the benefits are greater. Therefore, Senge places Systems Thinking as the discipline that integrates the others, merging them into a coherent body of theory and practice. Without a systemic orientation, it is difficult to determine the interrelation between the disciplines and the potential to have more strength than acting separately.

5. Methodology

The research corresponds to the type descriptive-exploratory and its design is not experimental and transactional. The population was of 103 professors of the Faculty of Administrative and Economic Sciences of the Technical University of Manabí in Ecuador. The sample was calculated with 5% margin of error and 95% confidence level, on the website of Asesoría Económica & Marketing S.A. (2009), the obtained result was a sample of 82 professors, distributed as follows: 37 from the career of Administration, 27 from the career of Accounting and Audit and 18 from the career of Economics.

The instrument used for this research was a 14-item questionnaire with Likert scale response categories valued from 1 to 5 (5 strongly agree, 4 agree, 3 neither agree nor disagree, 2 disagree, 1 strongly disagree). The Reliability was determined with the Cronbach alpha coefficient and was calculated with the SPSS program version 21. The result was 0.92, which ensures that the instrument is reliable.

To determine the validity of the instrument, the consultation criterion was applied, it was addressed to two experts in research methodology and two experts in organizational management studies. The gathered information was tabulated using the SPSS program, version 21. The tabulation was organized according to the five disciplines or key aspects that an organization must have to be considered as a learning one according to Senge: Systems Thinking, Personal Mastery, Mental Models, Shared Vision and Team Learning. The information was presented in tables with the data of relative and absolute frequency, mean, mode and standard deviation.

6. Analysis and discussion of the results

The results obtained from the application of the questionnaire are presented below. They were tabulated according to each dimension of the variable "Learning organizations" or in terms of Senge, "disciplines".

6.1. Dimension: Systems Thinking

Table 1
Systems Thinking
N=82

Answer Categories	Relationship among different organizational instances		Organizational performance		Use of changes proposed by professors	
	F	%	F	%	F	%
Strongly agree	48	58.5	21	25.6	11	13.4
Agree	15	18.3	25	30.5	36	43.9
Neither agree nor disagree	10	12.2	27	32.9	15	18.3
Disagree	0	0	9	11	8	9.8
Strongly disagree	9	10.9	0	0	12	14.6
Mean	4.13		3.32		3.71	
Mode	5		4		3	
Standard Deviation	1.303		1.256		0.975	

Source: self-made

Table 1 shows the average of the indicator **Relationship among different organizational instances** with a value of 4.13, approximately 4, corresponding to the category of **Agree**. The standard deviation valued 1.303 indicates that most of the responses are ranked between categories 4 (**Agree**) and 3 (**Neither agree nor disagree**). The obtained mode, 5, indicates the most selected answer as **Strongly agree**.

The mean of the indicator **Organizational performance** with a value of 3.32, close to 3, corresponds the category **Neither agree nor disagree**. The Standard Deviation for that value 1.256 indicates that most answers placed between **Agree and Disagree**. The Mode

valued 4 shows the prevailing answer as **Strongly agree**.

The mean of the indicator **Use of changes proposed by professors** with a value of 3.71, approximately 4, corresponds to the category of **Agreement**. The Standard Deviation for that indicator, with a value of 0.975, indicates that the majority of responses are between **Strongly Agree** (4.68) and **Disagree** (2.735). The Mode with a value of 4 shows that the answer most selected by the sample was **Strongly agree**.

Considering the Mode as a reference, it is possible to say that this dimension or discipline in terms of Senge is well valued by the professors surveyed, since most of them **agree** regarding the existence of relationships among the different organizational instances in the Faculty. The organization works as a whole and take advantage of the changes made by the professors. In general, the professors who participated in the study perceive that the Faculty has Systems Thinking, it is perceived as part of a larger system, which interacts with its surroundings through networks of relationships. This allows the Faculty to solve deep problems itself while feeling part of a greater whole.

Table 2
Personal Mastery
N= 82

Answer categories	Learning stimulus		Promotion of ongoing educational programs		Training oriented towards problem-solving	
	F	%	F	%	F	%
Strongly agree	21	25.6	30	36.6	5	6.1
Agree	36	43.9	32	39	66	80.5
Neither agree nor disagree	19	23.2	9	11	5	6.1
Disagree	6	7.3	11	13.4	0	0
Strongly disagree	0	0	0	0	6	7.3
Mean	3.88		3.99		3.78	
Mode	4		4		4	
Standard Deviation	0.880		1.012		0.861	

Source: self-made

Table 2 shows the Mean of the indicator **Learning stimulus**, with a value of 3.88, approximately 4 which corresponds to the **Agree** category. The Standard Deviation got a value of 0.880, indicating that most of the responses were between **Agree** and **Neither agree nor disagree** while the Mode with a value of 4 indicates that the most selected answer was **Agree**.

The mean of the indicator **Promotion of ongoing educational programs** got a value of 3.99, approximately 4, corresponding to the category **Agree**. The Standard Deviation obtained a value of 1.012 which indicates that most of the answers were between the categories **Strongly agree and Neither agree nor disagree** and finally, the Mode with a value of 4 indicates that the category **Agree** was the most selected answer.

The Mean for the indicator **Training oriented towards problem-solving** got a value of 3.78, approximately 4, corresponding to the category **Agree**, while the Standard Deviation

was 0.861 indicating that most of the answers ranked between the categories **Strongly agree** (4.64, approximately 5) and **Neither agree nor disagree** (2.919 close to 3). The Mode obtained a 4 which means that the most common answer was **Agree**.

When taking as a reference the value of the Mode, it can be said that the dimension or discipline Personal Mastery is well valued by the professors surveyed, since most of them agree that the Faculty stimulates learning, promotes ongoing educational programs and offer problem-solving programs. Consequently, people can master one or more areas of knowledge and be able to reach coherently the goals that matter most to them. The Faculty achieves this according to the results of table 2 where is stated that the directors of the Faculty are interested in connecting personal learning with organizational learning so that professors are able to learn until they master their area of knowledge and grow professionally.

Table 3
Mental Models

Answer categories	Promotion of open conversations		Open knowledge exchange	
	F	%	F	%
Strongly agree	5	6.1	0	0
Agree	51	62.2	35	42.7
Neither agree nor disagree	0	0	22	26.8
Disagree	20	24.4	10	12.2
Strongly disagree	6	7.3	15	18.3
Mean	3.35		2.94	
Mode	4		4	
Standard Deviation	1.14		1.14	

Source: self-made

Table 3 shows the Mean of the indicator **Promotion of open conversations** with a value of 3.35, approximately 3, which corresponds to the category **Neither agree nor disagree**. The Standard Deviation got a value of 1.14 indicating that most answers ranked between 2.2 (close to 2) and 4.49 (near to 4) corresponding the categories **Neither agree nor disagree** and **Agree** respectively. The Mode with a value of 4 indicates that the outstanding answer was the category **Agree**.

The Mean obtained for the indicator **Open knowledge exchange** got a value of 2.94, near 3, which corresponds to the category **Neither agree nor disagree**. The Standard Deviation was 1.14 indicating that most answers ranked between 1.8 (close to 2) and 4.08 (close to 4) corresponding to the categories **Disagree** and **Agree** respectively. The Mode was 4 which means that the prevailing answer corresponded to the category **Agree**.

When taking the value obtained from the Mode as a reference, it can be said that the dimension or discipline **Mental Models** is well valued by the professors who were given the questionnaire who mostly agree that in the Faculty **open conversations** are promoted as well as **the exchange of open knowledge**. For Senge, Mental Models are deeply rooted assumptions that influence our way of acting and understanding the world. According to the

results of Table 3, the discipline of working with Mental Models in the Faculty is related to the fact that the Mental Models of its members, according to the perception of the sample, do not hinder the new learning and progress of the organization.

Table 4
Shared Vision
N= 82

Answer categories	Shared Vision promotes commitment to the organization		Vision and mission of the organization known to all		Shared and Stimulating Visions	
	F	%	F	%	F	%
Strongly agree	5	6.1	6	7.3	15	18.3
Agree	57	69.5	57	69.5	47	57.3
Neither agree nor disagree	11	13.4	0	0	0	0
Disagree	0	0	10	12.2	11	13.4
Strongly disagree	9	11	9	11	9	11
Mean	3.60		3.50		3.59	
Mode	4		4		4	
Standard Deviation	1.017		1.147		1.247	

Source: self-made

Table 4 shows the Mean regarding the indicator **Shared Vision promotes commitment to the organization** as 3.60, with a Standard Deviation of 1.017. Thus, most of the answers between 2.6 (close to 3) meaning **Neither agree nor disagree** and 4.6 (near to 5) corresponding to **Strongly agree**. The Mode resulted to be 4 placing **Agree** as the most frequent answer.

The Mean of the indicator **Vision and mission of the organization known to all** got a value of 3.50 (approximately 4), corresponding to **Agree**. The Standard Deviation was 1.147 placing most of the answers between 2.35 (approximately 2) **Disagree** and 4.6 (approximately 5) **Agree**. The Mode of 4 indicates that the most frequent answer was **Agree**.

The Mean corresponding the indicator **Shared and stimulating visions**, with a value of 3.59 (approximately 4) relates to the category **Agree**. The Standard Deviation resulted to be 1.247 which indicates that most answers ranked between 2.3 (approximately 2) corresponding the category **Disagree** and 4.8 (approximately 5) corresponding the category **Strongly agree** while the Mode was 4 and indicates that the most frequent answer was **Agree**.

When taking the Mode as a reference, it can be said that this dimension or discipline in terms of Senge is well valued by the sample surveyed since most **agree** that in the Faculty the Shared Vision fosters a commitment to the organization where all know the vision and mission as a stimulus to be shared. In general, the surveyed sample perceives that there is

a Shared Vision in the Faculty, which allows putting into practice aptitudes to configure shared future visions for true commitment and not for obedience.

Table 5
Team learning

Answer categories	Teamwork as a fundamental unit of learning		Importance of Contributions to knowledge by external people		Participatory Processes of learning	
	F	%	F	%	F	%
Strongly agree	16	19.5	11	13.4	6	7.3
Agree	45	54.9	40	48.8	45	54.9
Neither agree nor disagree	9	11	14	17.1	9	11
Disagree	12	14.6	17	20.7	22	26.8
Strongly disagree	0	0	0	0	0	0
Mean	3.79		3.55		3.43	
Mode	4		4		4	
Standard Deviation	0.926		0.971		0.969	

Source: self-made

Table 5 shows the Mean regarding the indicator **Teamwork as a fundamental unit of learning**, with a value of 3.79, approximately 4, which got the category of **Agree**. The Standard Deviation was 0.926 indicating that most answers ranked between 2.864 (approximately 3) and 4.71 (approximately 5) corresponding to the category **Neither agree nor disagree** y **Strongly agree** respectively. The Mode was 3.79 (close to 4) indicating that the most chosen answer corresponded to the category **Agree**.

The Mean of the indicator **Importance of Contributions to knowledge by external people** was 2.94, close to 3, placing it in the category **Neither agree nor disagree**. The Standard Deviation was de 1.14 indicating that most answers were between 1.8 (close to 2) and 4.08 (close to 4) corresponding to the categories **Disagree** and **Agree** respectively. The Mode was 4 and indicates that most of the answers corresponded to the category **Agree**.

The Mean of the indicator **Participatory Processes of learning** was 3.43, approximately 3, placed under the category **Neither agree nor disagree**. The Standard Deviation with a value 0.969 indicates that most answers were between 2.461 (approximately 2) and 4.40 (approximately 4) corresponding to the categories **Disagree** and **Agree** respectively. The Mode valued 4 means that the prevailing answer corresponded to the category **Agree**.

According to the obtained value of the Mode, it can be said that the dimension or discipline **Team Learning** is well valued by most of the professors surveyed. They agree that in the Faculty the teamwork is a fundamental unit of learning, the knowledge provided by people outside the Faculty is considered important and the learning processes are carried out in a participatory way.

Peter Senge points out that teams can learn and supports that with amazing examples where the intelligence of the team exceeds the intelligence of its members, and where the

teams develop extraordinary skills to coordinate actions. When teams learn, not only do they generate extraordinary results but their members grow faster. This constitutes a positive element for growth as an institution such as the Facultad de Ciencias Administrativas y Económicas de la Universidad Técnica de Manabí. (Faculty of Administrative and Economic Sciences of the Technical University of Manabí).

7. Conclusions

Today it is possible, within the organization, to create a culture of sharing, when it is understood as the exchange of information and knowledge. However, unfortunately, although for some people, sharing is a development opportunity, for others it is a risk associated with the loss of power. The flexible structure is a core feature of learning organizations, which greatly favors knowledge management and optimal accomplishment of Senge's disciplines.

Learning organizations are characterized by being creators of knowledge and by having a culture of sharing it among its members in order to break down the barriers among people and among the different dependencies of the organization. Sharing and creating knowledge, in a free and disinterested way, benefits the organization as a whole to generate eventually collective knowledge. Systems Thinking in organizations such as universities plays a fundamental role because it is what allows its members to manage processes and knowledge in an integrated manner to increase the intellectual heritage and innovation capabilities of the institution.

Personal Mastery is understood as a very special level of ability or the ability to master an area of knowledge. It is a discipline that is mainly based on the discipline "Team Learning". The domain of one or more areas of knowledge is what allows members of organizations in general and universities, in particular, to deepen in what one wants to learn, to look for the form of how to relate what is mastered with what is ignored and how that could have a positive impact on the environment and the institution as well as broaden the vision a person has about some phenomenon. In a learning organization, the domain of an area of knowledge is not considered as if the person knows it all, but it is considered a stimulus to delve into that area of knowledge.

Mental Models are deeply ingrained assumptions that influence our way of acting and understanding the world. The problem arises when they negatively affect the organization where we live and hinder the driving innovative processes for the progress of individuals and organizations. A learning organization manages open Mental Models, encouraging interesting and open conversations where people can express themselves freely while respecting each other and favoring learning. This discipline is strategic for higher education institutions that want to grow thus they must become debate scenarios on different topics in order to boost knowledge.

Team Learning is essential to develop extraordinary skills and overcome the intelligence of the members of the Faculty. Dialogue is the beginning of a true learning and joint thinking that contributes to the mission of the universities. When training professionals, they require creativity, innovation, self-growth and synergies through the discipline of Team Learning among its members, professors, administrative staff and students. The conformation of high-performance teams allows creating knowledge and making effective decisions to strengthen the institution.

The perception of a Shared Vision of the Faculty studied shows the capacity to make real the values and goals planned as a whole. This discipline allows the members of the organization to get interested in the same goal. If the personal vision becomes the general one and is internalized, then it will be a Shared Vision. With this change, the link is generated, that is to say, the inner strength that integrates all members of the university to propose strategies that allow improving the educational quality of the Faculty in particular and the University in general. Thus, commitment is fostered; creativity, freedom, collective knowledge and common identity are motivated to contribute to transforming educational institutions and to achieve the desired objectives.

As it is observed, each discipline has an important weight in the organization, nevertheless, when applying the Systems Thinking, ideally is that they occur simultaneously, since one contributes to the other and all contribute to the organization. In general, the results show that the Faculty of Economics and Management Studies of the Technical University of Manabí, Ecuador is a learning organization according to most of the participants in the study since the Faculty was evaluated positively and was considered to have the five disciplines of Senge within it. However, it is important to consider and deepen in future research those disciplines that received responses with negative connotation such as Shared Vision, Mental Models and Team Learning.

Bibliographic references

Avendaño-Pérez, V. y Flores-Urbáez, M. (2016). Modelos teóricos de gestión del conocimiento: descriptores, conceptualizaciones y enfoques. *Entreciencias* (4)10, pp 201-227, agosto-noviembre. Available at the website:

<http://revistas.unam.mx/index.php/entreciencias/article/view/62127/54681>

Arano Chávez, R.; Cano Flores, M. y Olivera Gómez, D. (2012). Las organizaciones inteligentes como generador de entornos competitivos. *Revista Ciencia Administrativa*. 1, pp 41-45. Recuperado de: <https://www.uv.mx/iiesca/files/2013/04/04CA201201.pdf>

Chun Wei Choo. (1998). *La organización inteligente: el empleo de la información para dar significado, crear conocimiento y tomar decisiones*. México: Oxford University Press.

Giffort, E. (1996). *La organización inteligente. Aprovechando el talento y la iniciativa de todos en la empresa*. Editorial Berrett-Koehler Pub.

Gillezeau, P. (1999). La cultura organizacional en el desarrollo de organizaciones inteligentes. Fundamentos: valores, comunicación y liderazgo. *Telos*, (1), 2. Available at the website: <http://ojs.urbe.edu/index.php/telos/article/view/934/874>

León, R.; Tejada, E. y Yataco, M. (2003). Las organizaciones inteligentes. *Industrial Data*; (6) 2, pp 82-87. Available at the website: <http://www.redalyc.org/html/816/81660213/>

Nonaka y Takeuchi, (1998). *La organización creadora de conocimiento*. México: Oxford University Press.

Senge, P. (2005). *La quinta disciplina. Cómo impulsar el aprendizaje en la organización inteligente*. Argentina: Editorial Granica. 9na edición. Available at the website:

<https://books.google.com.ec/books?id=B2Nj49->

[ERykC&printsec=frontcover&hl=es&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false](https://books.google.com.ec/books?id=B2Nj49-ERykC&printsec=frontcover&hl=es&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false)

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