#### TITLE OF PAPER:

# Training Programs as instrument of Knowledge Transfer in banking offices. A Model tested in BCH (1991-1998)

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#### Abstract:

More than a decade after the deregulation of the banking service industries, consumers are accustomed to service providers competing on price. Bank services are intangible, ephemeral, experiential and information-based. In this context, Continuous Improvement (CI) has emerged as a key concept regarding how companies should both approach organizational effectiveness, both quality and efficiency. Continuous learning is essential for Continuous Improvement, and this can only be achieved if there is a willingness to learn and encouragement by the organisation for people to learn.

Before people and companies can improve, they first must learn (Garvin, 1998). For learning to be more than a local affair, knowledge must spread quickly and efficiently through the organization. Education and training programs are powerful tools for transferring knowledge. But for maximum effectiveness, they must be linked explicitly to implementation. Critical issues in this arena are tools for assessing an organization's level of learning to ensure that gains have in fact been made.

In this respect, we test a model of formal learning in a banking firm. Banking industry is a conservative one where the changes it face are incremental. Training programs, such as marketing programs and technology programs are examined in the BCH (Banco Central Hispano)<sup>1</sup> in 1998.

<sup>&</sup>lt;sup>1</sup> Now, BSCH due to its merger with Banco de Santander.

### Outline of the paper

The main objective of this research is configurate the role of Training Programs in the Knowledge Society. Organizations always have need training and education programs, the cuestion, in the 90's, is the high speed of changes and the need to gain positive results very quickly. In this paper, we observe *which* kind of changes have faced the commercial banking industry in last decade and *how* can the traditional methods of adaptation and learning, i.e., training, help to reach the complex challenges of productivity and quality that are required.

I first review the commercial bangking environment during the 90's and the increasingly importance of continuous learning in this context. The paper continues with the definition of Organizational Learning and the characteristics of Knowledge Management. In this context, I justify the training programs as instruments that promotes organizational learning in banking. Due to the conservative features of the commercial banking industry, the organizational learning sintesizes in Knowledge Transfer. Next, I present the data and methodology I use to test the training programs I examined in BCH at three points of time at the end of 1998. BCH is an spanish banking organization that always have rely on Training, it was in the 30's when started with a transparent and well-known policy of Training. Finally, I conclude with a summary of key issues, conclussions, discussion and lessons learned.

### **Background**

More than a decade after the deregulation of the banking service industries, consumers are accustomed to service providers competing on price. Now, consumers demand increasingly higher levels of service quality. Regulatory and market changes have led to increased competition among suppliers of financial service products. Besides, advances in information and communication technology have enabled finance companies, insurance dealers, and other nonbanking firms to enter the retail banking market without branch office networks.

Bank services have intangible, ephemeral, experiential and information-based. Three management functions are involved in delivering bank services: marketing, operations and human resources. In service

business, both the quality of the labor force and its commitment to the tasks become a major source of competitive advantage, especially when there is a high degree of contact between employees and customers.

In this context, Continuous Improvement (CI) has emerged as a key concept regarding how companies should approach organizational effectiveness, both quality and efficiency.

Continuous learning is essential for Continuous Improvement, and this can only be achieved if there is a willingness to learn and encouragement by the organisation for people to learn. Learning is an activity that needs an explicit effort.

#### Organizational Learning and Formal Knowledge Transfer Instruments

The concept which currently embraces our problem is that of the *Learning Organization*, an idea that was first put forward by Argyris and Schon (1978). But, what is a learning organization? The discussion of its definition as well as the definition of knowledge have often been reverential and utopian, filled with near mystical terminology. Senge (1990) who popularize learning organizations in his book *The Fifth Discipline*, described them as places "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together". Nonaka (1991) characterized knowledge-creating companies as places where "inventing new knowledge is not a specialized activity ... it is a way of behaving, indeed, a way of being, in which everyone is a knowledge worker." . Garvin (1993,1998 p. 51) consider the following definition "a learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights". Those definitions sound idyllic? What concrete changes in behavior are required? What policies and programs must be in place?

We need a theory of Knowledge<sup>2</sup> Management in order to be able to explain the learning process deepply (Spender, 1996). Theorist have begun to try to analyze the knowledge which is the result of the learning process (Kogut and Zander, 1992; Nelson and Winter, 1982; Nonaka, 1991; Nonaka and

<sup>&</sup>lt;sup>2</sup> What is Knowledge? Knowledge is commonly distinguished from data and information. Data represent observations or facts out of context that are, therefore, not directly meaningful. Information results from placing data within some meaningful context, often in the form of a message. Knowledge is that we come to believe and value on the basis of the meaninfully organized accumulation of information through experience, communicacion, or inference (McMaster, 1996; Zack, 1999).

Takeuchi, 1995; Winter, 1987). It is not enough just to talk about learning, we must identify ways of retaining and benefing from learning.

A number of theorist (Nelson and Winter, 1982; Teece, 1987; Nonaka and Takeuchi, 1995) have recently turned to Polanyi's (1962) distinction between explicit and tacit knowledge

- Tacit knowledge is subconsciously understood and applied, difficult to articulaten developed from direct experience and action, and usually shared through highly interactive conversation, sotrytelling, and shared experience.
- In contrast, explicit knowledge is more precisely and formally articulated, although removed from the original context of creation or use (e.g. an abstract mathematical formula derived from physical experiments or a training manual describing how to close a sale).

Knowledge also may range from the general to the specific.

- General knowledge is broad, often publicly available, and independent of particular events. Because the context of general knowledge is commonly shared, firms can morre easily and meaningfully codify and exchange it –especially among differente knowledge or practice communities.
- Specific knowledge, in contrast, is context-specific. Codifying specific knowledge so that is meaninful
  across an organization requires that a firm describe its context along with the focal knowledge. This,
  in turn, requires explictly defining contextual categories and relationships that are meaninful across
  knowledge communities.

Knowledge Management requires integrating and sharing highly distributed knowledge. However, appropriately explicating tacit knowledge so it can be efficiently and meaninfully shared and reapplied, especifically autside the originatign community, is one of the least understood aspects of knowledge management. In other words, a fundamental challege is determining which knowledge an organization should make explicit and which it should be leave tacit Organizations often do not challenge the way they store, treat and transfer knowledge, which may result in managers blindly accepting the apparent tacitness of some types of knowledge.

The management of knowledge involves two parts (Zack, 1999):

- Kowledge Repository: Knowledge structures that includes schemes por ling and cross-referencing knowledge units.
- Knowledge Refinery:Represents the process for capturing, creating and distributing the knowledge contained in a repository. This process includes 4 stages:

- Acquisition: An organization either creates information and knowledge or acquires it from various internal and external sources.
- Refinement: Before adding captured knowledge to a repository, an organization subjects it to value-adding processes (refining) such as cleansing, labelling, indexing, sorting, abstracting, standardizing, integrating and recategorizing.
- Storage and retrieval: This stage bridges upstream repository creation and downstream knowledge distribution.
- Transfer: This stage spread efficiently the knowledge throughout the organization. Ideas carry maximum impact when they are applicated broadly rather than held in a few hands (Garvin, 1993. 1998). This stage has two steps:
  - Distribution or Transmission: This step comprises the mechanismus an organization uses to make repository content accesible.
  - Use/Absorption: The context in which an organization uses knowledge influences its value. One of the most positive activons firms can ttake to improve employee learning application in large and medium-size organizations is to promote better teachers into middle management. It is demoralizing for employees to return from training and education experiences enthusiastic about applying new skills or knowledge only to confront an insecure supervisor who feels threatened by something new.

A variety of mechanismus spur the transfer, including writthen, oral, and visula reports, site visit and tours, personnel rotation programs and education and training programs.

- Reports an tours are by far the most popular mediums. Reports serve many purposes: they summarize findings, provide checklists of dos and don'ts, and describe important processes and events. Today written reports are often supplmented by videotapes, which offer greater immediacy and fidelity. Despite their popularity, reports and tours are realtive cumbersome ways of transferring knowledge. Absorbing facts by reading them or seeing them demonstrated is one thing, experiencing them personally is quite another. It is very difficult to become knowledgeable in a passive way. Actively experiencing something is considerably more valuable than having it described.
- For this reason personnel rotation programs are one of the most powerful methods of transferring knowledge. In many organizations, expertise is held locally: ina particularly skilled technician or a division head. Those in daily contact with these expertes benefict from their skills, but their field of influence is narrow. Transferring them to different parts of the organization helps share the wealth. E.g. A supervisor experienced in a practice, might move to another office to apply the methods there.

- Education and Training programs are powerful tools for transferring knowledge. But for maximum effectiveness they must be linked explicitly to implementation. All too often, trainers assume that new knowledge will be applied without taking concrete steps to ensure that trainees actually follow through. Seldom do trainers provide opportunities for practice, and few programs consciously promote the application of their teaching after employees have returned to their jobs. There are some exceptions. This article focuses on the impacts of training programs in BCH (Banco Central Hispano , 1991-1998).

The information technology infraestructure provides a seamless "pipeline" for the flow of explicit knowledge through the five stages of the refining process to enable: capturing knowledge, defining, storing, categorizing, searching, and distributing. Effective use of information technology to communicate knowledge requires that an organization share an interpretive context (Martín-Rubio y Casadesús, 1999). When communicators share similar knowledge, background, and experience, they can more effectively communicate knowledge via electronically mediated channels.

### Knowledge Transfer in Commercial banking industry

Commercial banking services are a conservative industry where the kind of changes they took in 90's were incremental, and tended to use formal mechanismus for managing knowledge. But, nowdays the euro is becoming a revulsive factor encouraging informal learning. Due to its conservative features, the organizational learning sintesizes in Knowledge Transfer.

The larger and more complex the firm is, the less likley is to find the best expertise in the next office. Greater size may increase the chances that the knowledge is needed exists somewhere in the company, but it decreases the likelihood to know *how and where* to find it. A firm that fails to keep track of components needed in a manufacturing process probably will not thrive. The same issue is true of companies that don't keep track of their knowledge components –even moro so, because knowledge assets are difficult to buy in a market.Knowledge abounds in our organizations, but its existence existence does not guaratee us. Before Transfer Knowledge Management process are carried, commercial banking companies have to capture all the componentes of the knowledge underlying best practices.

Nevis, Dibella y Gould (1995 p. 74) note that "most studies of organizational learning have been concerned with the acquisition of knowlege and, to a lesser extent, with the sharing or dissemination of the acquired knowledge (knowledge transfer)." DiBella y Nevis (1998), Earl (1999) explain that there are

different ways of learning, but one instrument is the training that facilitate the transfer of knowledge

among the different units of the organization.

Banks can learn continuously by paying attention to their human resource practices, specially,

training. The modularized training programs alternate with work experience in order to promote skill

development in banking offices. Firms can derive significant benefits from consciously, proactively, and

aggressively managing their explicit and explicable knowledge.

The relative difficulty of capturing and transfering knowledge depends on the kind of knowledge

involved. Knowledge that is more or less explicit can be embedded in procedures or represented in

documents and databases and transferred with reasonable accuracy. Tacit knowledge transfer generally

requires extensive personal contact..

Knowledge transfer involves two actions (Davenport and Prusak, 2000):

Transfer= Transmission + Absorption (Use)

1) transmission (sending or presenting knowledge to a potential recipient)

2) and absorption by that person or group. If knowledgee is not absorbed, it has not been

transferred. Merely making knowledge available is not transfer. Access is necessary but by no

means sufficient to ensure that knowledge will be used. The goal of transfer is to improve an

organization's ability to do things, and therefore increase its value.

Knowledge is transferred in organizations whether or not we manage the process at all. When an

employee asks a colleague in the next cubicle how to put together a budget request, he's requesting a

transfer of knowledge. These everyday knowledge transfers are part of organizational life. They are,

however, local and fragmentary.

The main problem that the commercial banking industry faces when dealing with informal

learning is its conservative feature. Habits and work practices continue to be the same, and to introduce

task innovations in order to learn more and better could be a difficult issue in the 90's. People judge the

information and knowledge they get in significant measure on the basis of who gives it to them.

Organizations that ignore this fact are likely to be disappointed by the results of knowledge transfer

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projects. Davenport and Prosak (200) observed that knowledge methods should suit the organizational culture.

I see formal training as an interactive and formal learning forum where firm encourages a continual cycle of knowledge creation and application, through its formal transfer. In these forums tacit knowledge is made explicit, and tacitily reaplied in context.

#### Competencies involved in delivering banking services

Three management functions should be inolved in nearly all facects of creating and delivering services (Lovelock, 1992):

- Marketing: Creating relationships with specific types of customers by delivering a carefully defined service package of consistent quiality that meets their needs ad is perceived as offering superior value to competitive alternatives. The marketing competencies includes not only the delivery system, but also additional components such exposure to advertising and recieving feed-back about their commercial practices.
- Operations: Using specific operational techniques and strategies –executed by appropriate facilities, equipment, and information technology. Bank services process information, and it has been revolutionized by information technology. Information is the most intangible form of service output and may be presented to the customer either face to face or through telecommunications. Performing a bank service involves assembling and delivering the output of a mix of physical facilities and mental labour. Often customers are involved in helping to create the service product, increasingly as the financial culture of the demand grows.

Only the front-office is visible to the customer, the rest is the "back-office". Recently, branch offices are reducing their space, the back-office is beinf performed in the central departments in order to save operational costs. The delivery system unites the front-office operations elements with the customers, who may themselves take an active role in helping create the service product, as opposed to being passively waited upon.

**Human Resources**: Leading, training motivating and retaining managers and other employees who can work well togeheter for a realistic compensation package to balance the twin goals of customeer satisfaction and operational effectiveness. Recognozing that service personnel are also "internal customers" of the organization, marketers and human resource managers should work togeher to identify employee needs and concerns. Improving the working environment and increasing employee job satisfaction are often key steps in improving service for "external customers". Front-line employees won't treat the customer any better than managers treat fron-line employees. Success in an

increasoingly competitive environment requires that operations managers work closely with their counterparts in marketing and human resources. Ideally, **line managers** should be trained in all three functions so that they recognize the constraints faced by each functional area and can understand (and resolve) their sometimes conflicting objectives. The role of leadership is the catalyst, that does what it takes to transform vision into achievement (Martín-Rubio,1998). Excellent service is within reach if managers are willing to stretch for it. The goal of the leadership training programs is to promote the flux of knowledge, explicit an implicit, and to generate teamwork that is going to satisfy customer needs and desieres.

### Methodology

In this respect, we test a model of formal learning in a banking firm. Training programs, such as marketing programs and technology programs are examined in the BCH (Banco Central Hispano)<sup>3</sup> in 1998.

The evaluation of training policies has focused almost exclusively in relationship between number of trained employees and efficiency or quality (Aragón et al 1999, Kidder y Rouiller, 1997; Murray y Rafaele, 1997; Huselid et al. 1997). In these study we explored in more detail the kind of training program that facilitate the CI of efficiency and quality, and according to Robinson and Robinson (1995) and Moingeon and Edmonson (1996) we study the correspondence between the nature of the learning organisation and the performance.

### **Data & Hypoteseses**

This study was part of a project conducted toghether with the BCH (Banco Central Hispano, 1991-1998). In this paper, we explored the performance of the formal learning at the level of banking offices stimulated by the training center. BCH started a new strategy in 1996 after their merger, between Banco Central and Banco Hispano (Martín Rubio, 2000). In 1996 BCH started gradually steps of continuous improvement.

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<sup>&</sup>lt;sup>3</sup> Now, SCH due to its merger with Banco de Santander.

We hypothesized that training programs affect and improve the results of banking offices, in terms of quality and efficiency. Figure 1 sumarizes the hypotheses.

We obtained efficiency and quality rates in three points of time at the end of 1998 from 720 offices (see table 1: Technical records). In these offices we register how many courses the employees have attended. Complete data were available for the training programs we examined: marketing, technology, leadership and quality. In relation to the conditions of the organization we observe the potential of promotion of the employee, the use of technology at the office, and the features of the commercial teams.

Tabla 1: **Technical record** 

UNIVERSE	2418 UNIVERSAL OFFICES	
COUNTRY	SPAIN	
SIZE OF THE SAMPLE	30 % UNIVERSAL OFFICES Total: 721 offices	
SAMPLING PROCEDURE	Random selection	
NUMBER OF PERSONS IN THESE OFFICES	5140 persons	
NUMBER OF PERSONS ATTENDED THE TRAINING PROGRAMS	2.260 persons	
NUMBER OF COURSES ATTENDED BY THE 2.260 PERSONS	7500 MARKETING 6500 TECHNOLOGY 1400 QUALITY 900 LEADERSHIP 100 TRAINERS 500 ACADEMIC  Total: 16.900 courses	

HIPOTHESES:

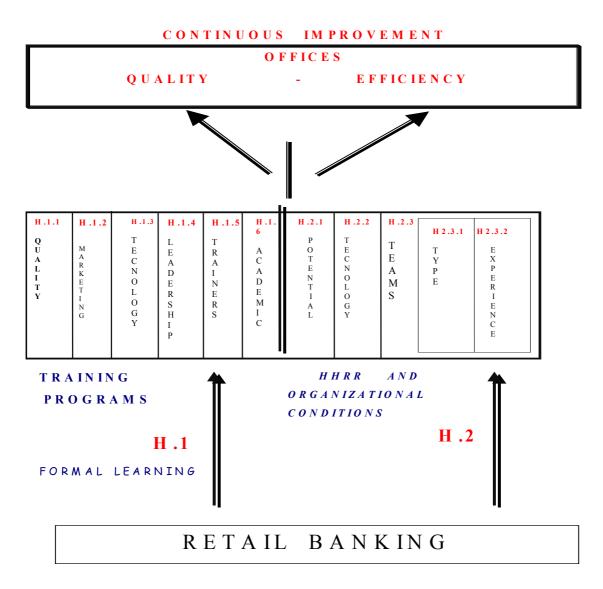


Figure 1: Hypotheses about CI and Training Programs

Results

With the SPSS program, and thanks to the "stepwise method" we observe the explanation of training programs in the results and improvement of banking offices. Conforming to our expectations  $R^2$  is bigger in the regression analysis for efficiency. Quality is a recent objective in the bank industry.

Tables 1 and 2 present the results of the multiples regression analyses, and the acceptance of hypotheses is reported in Figure 2.

Table 1 Evolution of the Models of Continuous Improvement of Efficiency thanks to the kind of

**Training Program** 

Training Trogram		
DEPENDENT VAR. :	DEPENDENT VAR.:	DEPENDENT VAR.:
EFICIENCY SEPT-98	EFICIENCY - NOV 98	EFICIENCY -DIC 98
(Constante): -,491	(Constante): -,486	(Constante): -,489
T_VENT: 3,795E-02	T_VENT: 3,808E-02	T_VENT: 3,769E-02
T_TEC: 3,763 E-02	T_TEC: 3,713E-02	T_TEC: 3,762E-02
TEAM: -,530	TEAM: -,533	TEAM: ,-528
POTENTIAL: 6,271 E-02	POTENTIAL: 6,319E-02	POTENTIAL: 6,377E-02
R=79,8%	R=79,1%	R=79,6%
R <sup>2</sup> =63,7%	R <sup>2</sup> =62,6%	R <sup>2</sup> =63,4%
R <sup>2</sup> adjusted=63,4%	R <sup>2</sup> adjusted=62,3%	R <sup>2</sup> adjusted=63,1%
F=240,199	F=229,459	F=236,960

Table 2: Evolution of the Models of Continuous Improvement of Quality thanks to the kind of Training Program

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OBJECTIVE : QUALITY 97	OBJECTIVE: QUALITY 98
(Constant): -,304	(Constant): 8,553
T_CALID: -,374	T_CALID: -,315
T_TEC: 5,834 E-02	T VENT: 4,583 E-02
REWARD :-6,567E-04	REWARD :-6,623E-04
	TYPE-OFFICE: ,224
R=43,3%	R= 42,4%
$R^2=18,8\%$	$R^2=18,0$
R <sup>2</sup> adjusted=18,3%	R <sup>2</sup> adjusted= 17,4%
F=42,334	F=29,972

In Hypotheses 1 we predicted that marketing, technology, leadership and quality programs improve the efficiency and quality of banking offices. This is totally true for marketing and technology training programs but quality programs show a different perspective if we observe the positive evolution

of its negative parameter. According to the previous literature, Procopio and Farfield-Sonn (1996, p. 136-137) state that "... Changing attitudes towards quality after a quality training program is still open to debate, and takes a great amount of time."

### **RESULTS**

### CONTINUOUS IMPROVEMENT BANKING OFFICES

	<b>EFICICENCY</b>	QUALITY
H.1. Training	✓	✓
H1.1. Quality		✓ (-)
H1.2. Marketing	✓	✓
H.1.3 Technology	✓	✓
H.1.4 Leadership		(observated in the study of informal learning)
H.1.5 Training of Trainers		(observated in informal learning study)
H.1.6 Academic		✓ in big offices
H.2. ORGANIZATION		
<b>H2.1</b> Potential of Development in the organization	✓	✓ (-)
H2.2 Information Technology	*	*
H.2.3 Teams		
Н.2.3.1 Туре	<b>√</b> (-)	
H.2.3.2 Experience	, ,	
Other Variables		Oficina type

 $\checkmark$  (-) : Coefficient  $\beta$  is negative but its evolution is positive

Figure 2: Acceptance of Hypotheses

When we predicted that the potential of promotion of the employee improve the results, we didn't expect such a significant power. With regard to the type of commercial team our model indicate that teams where people held a right hierarchical category - that is, no overstimated because seniority or other bureacratic feature- have better performance.

Overall, our results provide substantial support for the impact of Training Programs and suggest some features to study in deep in future research on Learning Organization.

#### **Conclussions and Discussion**

The empirical findings in this study support the evaluation of Training Programs connected with the operational levels where are implemented. However, the theoretical objective is more ambicious and try to look into the organizational learning and knowledge management system where the training program is configured.

Organizational learning capability is a complex social phenomenon, and its skills are industry rather than generic (Collis, 1996). In some industries, there are needed more Knowledge Acquisition abilities while in others was Knowledge Transfer and Utilization. The problem that faced the spanish commercial banking industry during last decade was a case of Knowledge Transfer to all the members belonging to the banking offices.

We suggest micro organizational theory models to study the arena of Learning Organization connected with operational results. Continuous Improvement and Knowledge Transfer only can be observed through the incremental changes happened at the operational levels, because knowledge taht isn't absorbed hasn't really been transferred (Davenport y Prusak. 2000)

One limitation of this study stems from the same challenge that commercial banks are facing nowadays: the definition of the impact of empowerment on the allocation of decision rights, rewards systems and the distribution of information within a conservative industry. The euro is challenging these perspectives and promoving the informal learning among employeees, and among employees and customers.

This study was made in 1999 and completed in 2000. We can not finish this conclusions without making a simple reference to its actual stage. Since 1999, the actual SCH has challenged the way they store, treat and transfer knowledge in its excellent e-learning experience.

Future work emphasizing interdependencies among quality, empowerment, type of quality training, reward system, information technologies, type of teams and bounded emotionality in the relationship between employee and customer should tell researchers and practitioners more about Knowledge Transfer Management.

Knowledge is the frontier of tomorrow. Denis Waitley, Seeds of Greatness

#### References

- ANDREU, R.; CIBORRA, C. (1996) "Core Capabilities and Information Technology: An Organizational Learning Approach". In Moingeon, B. and Edmondson, A. (eds) *Organizational Learning and Competitive Advantage*. Ed. Sage Publications, London
- ARAGON,A.; BARBA,M.I.; SANZ,R. (1999) "Eficacia y resultados de la formación de los recursos humanos en las pymes" II Workshop Internacional de RRHH, Universidad de Cádiz
- ARGYRIS, C. (1977) "Double Loop Learning in Organizations" *Harvard Business Review*, September-October
- ARGYRIS, C.; SCHON,D. (1978) Organizational Learning. Ed. Sage Publications, London
- CHOI, T. (1995) "Conceptualizing Continuous Improvement: Implications for Organizational Change" *Omega, International Journal of Management Science*. Vol. 23, no. 6 pp. 607-624
- COLLIS, D.J. (1996) "Organizational capability as a source of profit" En MOINGEON, B.; EDMONDSON, A. (Eds.) *Organizational Learning and Competitive Advantage*. Ed. Sage Publications, London, pp. 139-163
- DAVENPORT, Th.H., ; PRUSAK, L. (2000) "Working Kwnowledge. How organizations manage what they know" Harvard Business School Press
- DEMING, W.E. (1986) Out of the Crisis. Ed. MIT Press, Cambridge
- EHIN, CH. (2000) Unleashing Intellectual Capital. Ed. BH, Boston
- DIBELLA, A.; NEVIS,E; GOULD, J.M. (1995) "Understanding organizations as Learning Systems" *Sloan Managemen Review/Winter*
- DIBELLA, A.; NEVIS, E. (1998) How organizationals learn: an integrated strategy for building learning capability". Ed. Jossey- Bass, San Francisco
- GARVIN,D.A. (1998) "Builiding a Learning Organization" *Harvard Business Review on Knowledge Management*. Harvard Business School Press. Originally published in 1993
- HUSELID, M.A. JACKSON, S.E.; SCHULER, R.S. (1997) "Technical and strategic human resource management effectiveness as determinants of firm performance" *Academy of Management Journal*, Vol. 40, no. 1 pp. 171-188
- KIDDER, P.J.; ROUILLER, J.Z. (1997) "Evaluating the Success of a Large-Scale Training Effort" *National Productivity* Review, Spring, pp. 371-380
- MARTÍN RUBIO,I. (1998) "Liderazgo organizacional" Papeles de Formación, no. 11 Mayo
- MARTÍN RUBIO, ; CASADESÚS, M. (1999) "Las TIC como factor determinante del Aprendizaje Organizativo. El caso de una empresa suministradora en el sector del automóvil". *Economía Industrial, No. 326*/II
- MARTIN RUBIO, I. (2000) "La Formación del Personal. Caso :Plan de Formación del BCH (1991-1998)" En FERNÁNDEZ, J.y LÓPEZ, I. *Manual Práctico Gestión y Dirección Recursos Humanos*. Ed. ISTP Instituto Superior de Técnicas y Prácticas Bancarias, Madrid

- MOINGEON, B.; EDMONDSON, A. (1996) (eds.) *Organizational Learning and Competitive Advantage*. Ed. Sage Publications, London
- MURRAY, B.; RAFAELE, G.C. (1997)"Single-site, results level. Evaluation of Quality awareness training" *Human Resource Development Quaterly*, vol. 8 no. 3 pp. 229-245
- NONAKA,I. (1991) "The knowledge-Creating Company" *Harvard Business Review*, November-December 1991
- NONAKA, I; TAKEUCHI, H (1995) *The Knowledge-creating Company*. Ed. University Press, Oxford
- McMASTER, M.D. (1996) *The Intelligence Advantage. Organizing for Complexity*. Ed. Butterworth-heineman, Boston.
- PROCOPIO, A.J.; FAIRFELD-SONN, J.W. (1996) "Changing Attitutudes Toward Quality. An exploratory study" *Group & Organization Management*, Vol. 21 No. 2 June, 1996, pp. 133-145
- ROBINSON, D.G.; ROBINSON, J. (1995) *Performance Consulting Moving Beyond Training* Ed. Berrett-Koehler Publishers, San Francisco
- SENGE, P. (1990) The Fifth Discipline. Doubleday, NewYork.
- SOLÉ, F.; MIRAVET, M (1997) *Guía para la formación en la Empresa*. Ed. Civitas Colección Empresa
- SPENDER, J.c. (1996)"Making Knoledge the Basis of a Dynamic Theory of the Firm"Strategic Management Journal Vol. 17 Winter Special Issue, 45-62
- YIN,R.K. (1989) Case Sstudy Research. Design and Methods. Ed. Sage Publications, Newbury Park
- ZACK, M.H. (1999) "Managing Codified Knowledge" Sloan Management Review, Summer