

## Organizational Modernization and Innovative Training Practices: A Relational Model of Study

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### Abstract

*The present article - resultant of a wider research that culminated in a doctorate thesis - intends to investigate the relations among the following variables: Organizational Modernity (GMO) and Innovation of Training, Development and Educational Practices (GIT). Starting with a sample of 595 professionals regularly enrolled in "lato-sensu" (specialization) masters' degree programs in business administration, offered by several institutions of higher education located in the metropolitan area of Belo Horizonte (MG). This research is based on a quantitative content; data collection was accomplished through theoretical questionnaires that contemplated studies on training, development and education developed, as well as studies on organizational modernity developed. The collected data was submitted to statistical treatment that involved the use of descriptive techniques and multivariate analysis. The results revealed a positive and intense relationship among the degree of organizational modernity and the degree of innovation of training, development and educational practices.*

**Key words:** Organizational modernity, training, development and educational practices



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### INTRODUCTION

The "knowledge society" has led to the valorization of competences in a way never seen before in the history of business administration. Therefore, training should participate in the concept of strategic models of management concerned with the employees' educational and learning potential, without losing sight of the definition and development of diversified competences, oriented to business' results, in an essentially competitive environment.

From other perspective, this competitive environment has been demanding - besides new ways to perform the work tasks - fresh individual and organizational competences developed through continuous learning processes. Therefore, the implementation of the new educational systems - necessary for each new change - also tends to unchain new training needs, whose instructional actions may have higher or lower emphasis on issues related to organizational development and modernization.

On the one hand, modernity of the organizations pinpoints to changes in the managerial structure and management models, on the other, one cannot forget to consider the training, development and educational practices that should accompany and facilitate the modernization actions.

The following of world tendencies of learning, knowledge and human resource management constitutes a great challenge for organizations in this moment of great economic transformations in the world (Dutra 2004). The operationalization of those tendencies requests, besides speed, the existence of a culture - that allows the access and share of internal knowledge within organizations - whose central objectives point to the quality of products and services and, mainly, to the qualification of human capital.

In the Brazilian case, however, most of the training programs still disentailed from the business strategies, therefore, adding little value to the results (Eboli, 2001). Nevertheless, the expenses with those programs are quite meaningful.

At the same time that a new organizational reality comes into view, and human competences obtain space and value in ways never yet seen in the history of management - there is an intensification of the amount of work ascribed to the employee, and most of the time, it is generated by downsizing processes, allied to the sophistication of mechanisms and forms of control that are amplified by the technological

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innovations adopted by the companies (Sant'Anna, 2002). Still contributing to the reinforcement of that contradiction, it is verified a rising level of pressure on the employees, prominently the demand for constant professional update, whose ideological support is legitimated by speeches of competitiveness, development, employability and acquisition of competences.

Presenting that context as backdrop, this article - part of a wider doctorate's thesis research - intends to identify and analyze the relations between the innovative practices of training and the degree of organizational modernity in among individuals - professionals associated to several organizations - regularly enrolled in "lato sensu" (specialization) masters degree courses of the metropolitan Belo Horizonte area. The methodological procedures included multivariate statistics and structural equation modeling.

### THEORETICAL REFERENTIAL

The theoretical referential of this work is composed of two complementally parts. Initially the studies and researches about training and its historical evolution are presented; later the theme organizational modernity is explored.

The first specialists concerned with training and qualifying the managerial force were Taylor (1970) and Fayol (1950). To both, the development of a leader included an effort of amplification of the manager's cultural base and premises that the improvement of the manager's performance of in high hierarchical levels could only be achieved through direct recruitment in the labor market, namely: without training processes conducted via short-term programs.

Consequently, the high-level management force should be ready and recruited in the market, this recruitment is preceded by a series of requirements (necessary qualities to the managerial or supervision functions), what spared the need of specific training.

However, the neoclassicists (followers of Frederick Taylor and Henri Fayol) intended to differentiate the *managerial phenomena*, elevating it to a specific field of studies. Among them, we can mention, Urwick (1943), Gulick et al. (1937), as the ones who gave a general character to the normative focus of management through seven managerial factors: *Planning, Organizing, Staffing, Directing, Coordinating, Reporting, Budgeting*. For such authors, the essence of the managerial function underlies in the compliance to those normative factors.

The concept of the training then started to admit the possibility of high-speed learning - through short-term courses as a concrete fact. The manager should obligatorily incorporate the values and the essence of normative terms.

The managerial training started, therefore, to be ideologically dominated by the normative optic (Drago, 1980).

After that, the studies of Mayo (1947), Lewin (1935) and Roethlisberger (1941) arrived in the same track of the human relations movement (HRM) - particularly in the 1950s - when they started to defend a thesis stating that *the human factor was essential for the concept of a managerial theory*.

From then on, the concept of managerial development was based on the improvement of human relations and development of democratic styles of leadership that facilitated consensus and promoted spontaneous participation. Therefore, training methods and knowledge diffusion techniques - all centered in the participants - flourished.

Among the critics of the humanistic approach, we can mention Simon (1965) - considered by many authors as one of the biggest exponents of the behaviorist thought - also proposed to build the theory of decision making, emphasizing that decision-making<sup>5</sup> is much more important than the subsequent executive actions. Under that viewpoint, organizations are perceived as decision systems, where people notice, feel, decide and act, defining their behavior in face of situations that come across.

In the humanistic approach, the training programs focus the change of behavior and incorporation of the organizational values. Another perspective in the organizational theory is the structuralist approach;

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<sup>5</sup> T.N.: Simon's 4 phases of decision making: Intelligence, design, choice and implementation.

which expanded the organization vision with the introduction of the sociological aspect. Critical analyses of society and organizations propitiated the discovery of new ways for understanding the organizational phenomenon.

Training programs begun to approach themes related to the management praxis, like managerial planning, performance evaluation systems, development of personal skills such as writing, communication etc. It is important remembering that the structuralist approach expressed an eminently critic concern about social and power conflicts. Its analysis comprehends two levels: macro level or social level and micro level or interpersonal level. Works of Etzioni (1980), Thompson (1971), Blau (1971), Perrow (1976) and Parsons (1976) stand out in that approach.

The systemic vision or systems theory tried to overturn the idea - fed by the dynamics of specialization - that all knowledge is compartmentalized. Therefore, in that approach, the lower the specialization degree, the higher will be the social knowledge domain and, as a consequence, the greater will be the perception and understanding of the whole system. That approach focused the acquisition of general abilities to the detriment of specialized techniques. Some authors stood out in exploring the systemic vision: Bertalanffy (1974), Miller (1965), Lawrence and Lorsch (1973), Katz and Kahn (1970).

The most recent form of organizational theory - denominated contingency theory, was influenced by the complex systems theory, was complemented by the inclusion of a study about the influence of exogenous variables on the firms' behavioral and structural aspects. Such influence was denominated environmental analysis. Some of the main exponents of that line were: Burns and Stalker (1961), Woodward (1970), Koontz and O'Donnell (1976), Mintzberg (1979), Galbraith (1973), Schein (1982), Hersey and Blanchard (1986), among others.

So far, we examined some of the main schools or approaches of the organizational theory and its possible repercussions over personnel (HR) training. Each one emerged as an answer attempt to the problems presented in its historical moment.

With the enlargement of the organizations and its subsequent internationalization, the professionalization of the organizations' managerial structure was, then, imperative. Thus, it prompted the launch of techno-structure (Galbraith, 1973). Therefore, training is addressed to the manager, who is a multiplier and reinforcing element of the values of the organization.

From the 1990s on the productive layout of the organizations became more horizontalized, which presupposes changes - in the relations of power - leading to liberal relations, whose dominant ideology comes under the *organizational citizenship* form (Srouf, 1998). Power, then, ceases being the disciplinarian force of the organizational agents, giving way to knowledge as an element of cohesion, orientation and legitimating. Therefore, competitive organizations start to demand qualified labor.

The so-called continuous learning or continuous education becomes part of the work process, and the old organization gives place to the learning organization, which qualifies its personnel in a continuous way, especially the managerial level, once it is considered strategic.

The managerial role has a significant attribution in the training/development (TD) process as it propagates and catalyzes the organizational knowledge.

Therefore, the intellectual capital starts to represent a competitive differential. The qualification of the companies' high management becomes obligatory. Thus, training is conquering in the firms the same place that education and school occupy in the society at large.

Training took the responsibility of making the necessary "introduction" of the team members to the company, and through it occurs the internalization of values, beliefs, norms and necessary behaviors that contribute to the transformation of the individual's self-image, taking him/her to understand the search for self-development in a fast-change and constant learning environment. The development concept supposes that managers and team members are conscious that reality is not outside, waiting to be discovered or understood. Each individual is an active player in the social reality. From the 1990s on, training programs have been looking for to reproduce as faithfully as possible, the work environment of trainee, once, besides learning the know-how, the trainee also needs to fully understand the reasons why something can or should be done.

Professional training became an element that reaches out beyond the simple acquisition of information, change of attitudes and development of abilities. It includes the adjustment of meanings and assessment

of referential. Nowadays, a close relationship between firm and school is verified, and the educational process is more and more present in the organizations (agreements, corporate universities etc).

But, in the history of training, there was always certain confusion in the delimitation of the concept. Many times, that concept is mixed up or identified with the terms *development and education*. The 3 terms (training, development and education) refer to quite different types of activity (Castro, 1999). *Training* only seeks to improve employee's performance in his/her position. The term *education* refers to the opportunities given by the organization to the employee - in order to develop his/her potential - through new abilities that qualify the person to occupy new positions inside of the same organization. For the author, the concept of *development* includes and refers to the group of experiences and learning opportunities given by the organization to enable the personal growth of employees. In that way, development tends to capacitate the employee, without using strategies to direct him/her towards a specific path. Also, the author affirms that *instruction* represents a very important part of the training system, because it seeks to formulate specific objectives and to select the best teaching methods for the objectives assigned.

Based on the instructional and cognitive psychology training is seen from the instructional system's perspective (Borges-Andrade, 1986). Thus, training is considered a system composed by elements or subsystems, which maintain a close interdependence to each other, and with the external environment.

When analyzing the new perspectives of training, as from 1997, there is a close association among *education, modernity and competitiveness*. Therefore, the adoption of a strategic educational system became an essential condition for the companies interested in developing its human talents in an efficient manner (Eboli, 2002). Those systems were enabled through the implementation of *corporate universities*. Therefore, corporate universities represent systems of manpower development, having strategic HR management models - such as, the HR competency model - as support pillars.

For the author, the emergence of the corporate university concept represented a historical mark that evidences the migration of the traditional training core (focus on position) towards corporate education (focus on competences), which embraces all employees and partners of a company.

Del Maestro Filho (2004), researching the relations among organizational modernization, innovative practices of training and satisfaction in the workplace, presents in his study an outline a range of training approaches employed along the historical evolution of the theory of organizations - emphasizing several concepts of training and its relations with work productivity. Besides, the author also summarizes all scientific investigations regarding training, development and education - based on Borges-Andrade's (1996) and Abbad (2003) (2004) works. Using that summary, he was able ascertains that the approach of most researches (national, as well as international ones) explored aspects related to the evaluation of training.

Meaning that in the theory of organizations history several authors created numerous concepts for training and HR development and it is believed that those authors did coherently adhere to their principles and historical periods of time. However it's important to highlight the current focus of training and development concept - which has been examined under the systemic approach light - whose traditional concept incorporated the strategic education perspective, focusing the concept of competences in detriment of the traditional concept based on position (rank).

The continuity of the theoretical referential of this work following presents a conceptual synthesis on workplace satisfaction, and outlines the evolution of the studies and perspectives of this field of research.

## **ORGANIZATIONAL MODERNITY (OM): CONCEPTUAL SYNTHESIS, EVOLUTION OF OM STUDIES AND PERSPECTIVES**

The second part of the present theoretical referential contemplates the studies on modernity, analyzed under two views: historical and organizational. Modernity analyzed under the historical prism, which is to say - perceived as a specific stage of the historical path - can be studied in its several aspects or dimensions, accepting, several characterizations, time-periods and conceptualizations. For the above-mentioned author, modernity actually constitutes an open, pluridimensional and polissemic process (De Paula, 2000).

Other approaches to modernity can also be considered, such as the cultural focus that presupposes several interpretations, the phenomenological focus, which perceives modernity as a technical-material phenomenon, and/or the political-ideological phenomenon. The phenomenological approach still reputes modernity as a religious, ethical-behaviorist, economic and geographic-spatial phenomenon.

Therefore, modernity has constituted the essential reference of several fields and disciplines of knowledge, in its diverse philosophical-ideological shades. When studying modernity, one cannot bypass its importance for the western civilization project, once it meant the emergence of institutions, values, concepts, attitudes, and specific ways to experience a certain era. It also mirrors the material production and reproduction, the space, and the organization and political life of an era.

Under the historical perspective and employing the same dialectic, study on the evolution of the modernist ideology - the classic concept of modernity has showed the triumph of reason, freedom and revolution. The notion of modernity is, on the one hand, a result of the Greek-Roman rationalism, which was rescued by the humanist philosophers of the renaissance, and on the other hand, results from the Jewish-Christian concept of soul, secularized through notion of subject (Touraine, 2002).

The classic concept of modernity had as central theme the social actor's identification with his/her works and production, both generated either by the victory of the scientific and technical reason or by the rational solutions brought by society for the satisfaction of individuals' needs and desires. For a long time, modernity was understood only by the effectiveness of the instrumental rationality, and the human subject was ignored as freedom and as creation (Touraine, 2002).

In that way, the rationalistic reductionism took modernity to an identity crisis. The concept of modernity propels, therefore, the man towards the center of the society, contemplating its several dimensions (technological, social, political and cultural).

In the technological dimension ambit it is necessary to combine rationalization and subjectivation. The social dimension constitutes the possibility of promoting subjectivation via social movements. Yet, the political dimension contemplates the invigoration of democracy, which represents a regime that allows the individual's political expression.

Finally, emphasizes the cultural dimension, which should consider the values of freedom and effectiveness as its essence and origin (Touraine, 2002).

Another vertende goes beyond the concepts previously presented, where modernity is synonymous with modern society or industrial civilization, and is associated with three fundamental. The first aspect refers to a group of attitudes before the world, as the idea that the world is susceptible to transformations caused by human intervention. The second aspect considers a compound of economic institutions and, especially, industrial production and market economy. The third aspect involves an entire range of political institutions as the nation-state and the mass democracy (Giddens, A. & Pierson, C., 2000).

This reasoning is finalized when it asserts that modernity is a product of a capitalist economic order which involves the creation of a special kind of state, as well as the construction of a type of organization that mainly depend on the structuring of information (Giddens, A. & Pierson, C., 2000).

Eboli (1996) -, while founding his work on Touraine's ideas (2002), and incorporating the viewpoint of other intellectuals, such as Zajdsnajder (1993), Faoro (1992), and Mota (1995) - elaborated a description of the key characteristics of modern society, highlighting its most important attributes, and in conformity with its main dimensions: cultural, politics, social, managerial, economic and technological.

The concept of modern organization and the indicators of organizational modernity developed by Eboli (1996) are presented below.

The concept of modern organization defines that - once inserted in modern society - this type of organization reproduces the characteristics of that society, and contributes to the entrance of equally modern individuals' in the same social context. To illustrate that, we created a group of indicators that seek to capture and facilitate a deeper analysis of modernity in the micro level, that is, in the context of organizations. Those indicators are present in Figure 1 and grouped according to the nature of modern society's dimensions (Eboli, 1996).

**Figure 1 - This chart presents organizational modernity's indicators**

Modern Society Dimensions	Modernity Indicators in the Organizational Context
<b>Cultural</b>	<ol style="list-style-type: none"> <li>1. Allows ambiguities and diversities</li> <li>2. Allows and stimulates the diversity of practices, behaviors and attitudes</li> <li>3. Values initiative, responsibility and freedom</li> <li>4. Orientation to the future, without eliminating the past</li> <li>5. Concern with ethical principles</li> <li>6. Internal environment favors change, innovation and learning</li> </ol>
<b>Political</b>	<ol style="list-style-type: none"> <li>1. Political-democratic regime</li> <li>2. Decentralized decision-making and democratic processes</li> <li>3. Existence of representation systems</li> <li>4. It allows the social actors to be formed and act freely</li> <li>5. It commits the people with your processes</li> <li>6. Stimulates the political action</li> <li>7. Favors the conscience and the exercise of the citizenship</li> <li>8. Stimulates the autonomy, the action initiative and decision</li> <li>9. The conflict is a healthy system</li> </ol>
<b>Social</b>	<ol style="list-style-type: none"> <li>1. Authority as the base of the social relations</li> <li>2. Horizontalization of the social relations</li> <li>3. Encouragement to the social integration</li> <li>4. Stimulates the individual's participation in organizational processes</li> <li>5. Reduces the distances and social barriers</li> <li>6. Social objectives are subordinated to you value ethical</li> <li>7. Favors that individual should stay informed</li> <li>8. Favors that individuals should reach their material or psychological objectives</li> </ol>
<b>Managerial</b>	<ol style="list-style-type: none"> <li>1. There is a clear definition of the mission, objectives, strategies and goals</li> <li>2. Elaborates projects</li> <li>3. management has long-term vision and worries about planning</li> <li>4. The politics and practices stimulate the self-development</li> <li>5. Concern in evaluating results in organizational and personal levels</li> </ol>
<b>Economic</b>	<ol style="list-style-type: none"> <li>1. Economic objectives are subordinated to social objectives and ethical beginnings</li> <li>2. The concern with the effectiveness and prosperity is translated into participation the market, productivity, profitability, return on the investments and</li> <li>3. Quality of products or presented services</li> </ol>
<b>Technologic</b>	<ol style="list-style-type: none"> <li>1. Use of technologies that favor efficiency and effectiveness</li> <li>2. Flexibility for the innovation</li> <li>3. Technical aspects are subordinated to the economic rationality</li> <li>4. Harmony between technology and use of the human creativity</li> <li>5. Technology is considered as a way and, not as an end</li> <li>6. Technology favors the social interaction</li> <li>7. Combines technical and cultural universe</li> <li>8. Favors high degree of the individual's information</li> </ol>

Source: EBOLI (1996), p. 47 and SANT'ANNA (2002), p.74, adapted by Del Maestro Filho (2004).

Therefore, the indicators used in the research were extracted from the model proposed by Eboli (1996), and validated by Sant'Anna (2002) in his work about individual competences, modernity and workplace satisfaction.

Concluding the theoretical referential of the present article, it is important to emphasize that, here, the concept of modernity is discussed under the viewpoint of thinkers and academics, most foreigners. Hence, it is necessary to bring about the foremost studies and researches on the theme, accomplished in the context of the Brazilian organizations.

Brazil is the largest country and the leading economy of Latin America. From the 1990s on - by way of the so-called opening of the economy - a drastic transformation began in the Brazilian economic model and in its society.

When analyzing the profile of competitiveness of the Brazilian economy (Wood Jr, 2000), affirms which organizations with different modernity levels exist side by side. In that way, in the same economic environment, recognizably efficient organizations coexist beside hindered ones, which survive in almost non-competitive sectors where the most traditional managerial practices, currently outmoded, were not even adopted yet.

Observes although, that the namely *Brazilian way of managing* is characterized by great heterogeneity. At the same time, while a significant number of organizations adopt a managerial model - equivalent to the world's most advanced technologies of management - other sectors preserve traces of an aged, technocratic and conservative culture, in which the hierarchical or businesses relations are still characterized by a narrow-minded and non-professional way (Wood Jr, 2000).

In this context, the issue of modernity has been prominently placed towards the need and importance of preparing organizations to face the novel global competition, through the adoption of structural configurations, action strategies, policies and compatible management practices that contribute to the development of cultural contents that propitiate the arise of behaviors suited to that new managerial reality.

All managerial experience and strategy acquired have not been enough to face to the demands imposed by the globalized environment of today's organizations. Is necessary to break with the past, to abandon traditional experiences and turn the attention to creative solutions that can, in time, offer the organizations the tools and competences capable to assist the emergent environmental demands (Golçalves, 1997).

The characteristics of the new organizational globalized environment question two classic governance structures of the companies: the hierarchy and the market. In consequence of that new environment, hybrid forms of organizations appeared, more flexible and adapted to the business environment, such as, for instance, the networks, also denominated network organizations (Lopes, 2004).

In that same reasoning line, when analyzing the organizational modernity issue, the foremost consequence of the transformations in course in the contemporary business world implies that the definition of modern company ought to be: *learning organization*, a place where the HR potential should be rediscovered and motivated and developed as an leverage element packed with productivity potential (Markert, 2000).

Another Brazilian author that explores the subject organizational modernity, under the same perspective of the previous ones, is Ruas (1997). In his study on socio-economic restructuring, adaptation of companies and management of the work, he highlights the global adaptation strategy, observed mainly in companies attending to the external markets, such as the auto industry, the electronic industry, the petrochemical industry and paper and cellulose manufacturing industry.

In those organizations, there is a larger involvement of the workers with the companies through new responsibilities and attributions occur in consequence of operational and cultural changes, although he recognizes that organizational changes are identified with the large managerial groups that represent state of the art industries (Ruas, 1997).

In the end of the eighties, with the worsening of the economic crisis, the organizational innovation had a role of highest importance, beside the new production concepts. However, in the Brazilian case, the organizational modernity still has characteristics of *conservative modernization*, with the presence of taylorist and fordist components, represented by the maintenance in authoritarian ways of HR management, low wages and resistance to the stabilization of the labor (Leite, 1997).

Other authors, such as Fleury and Fleury (1995), although agreeing with that group of characteristics and tendencies of the Brazilian organizational modernity; affirm that the development of a management

model that comes to figure out as the most appropriate to the country's reality is a hard task. However, the authors recognize the existence of some premises that are actually guiding the search of new organizational configurations. Among those premises stand out: the systemic thought, strategic action, integrated decision-making processes, intelligent use of information and cooperation in the competition. The several ideas presented here, take us to think about organizational modernity and its effects on people. When specifically analyzing the national literature, it can be verified that a consensus on the subject does not exist.

Leaving discussions and antagonisms aside, the fact is that some actions and tendencies of modernity seem to be quickly propagating in the Brazilian managerial scene, especially amid organizations considered innovative. Among those tendencies, training, development and educational policies stand out, evolved from the traditional model towards continuous or corporate education model (Eboli, 2002).

The present paper reviewed the literature of differences in organizational modernity and, on the one hand, it contemplated a historical analysis of the context, approaching, on the one hand, the main characteristics and notions concerning modernity and, on the other hand, the ideas, perspectives and indicators presented by Eboli's model (1996), which was conceived to evaluate the degree of organizational modernity. The same model was used by Sant'Anna (2002), and it was also confirmed by the research-study used to support the work.

## **METHODOLOGY**

The present work is a quantitative-descriptive study that investigated the relations among the degree of innovation of training, development and educational practices and the degree of organizational modernization. The sample consisted of 604 respondents from several higher education institutions, located at metropolitan Belo Horizonte area, which offer "lato sensu" (specialization) courses in business administration. The sample attended the statistical sampling demands, as well as the objectives established for the study.

The instrument used for data collection was a survey questionnaire, including Likert-type scales of eleven points (0 to 10). For the evaluation of innovative training, development and educational practices, a total of 45 questions - subdivided in three groups - were applied:

The first group, containing 14 questions about practices related to the survey of the organizations' training needs.

The second group, made-up of 23 questions, had the objective of measuring the degree of organizational modernization, and regarded modernization aspects - including its 3 types: managerial, cultural and political modernization.

The data collected through questionnaires was initially tabulated into Microsoft Excel, in order to be later inputted into the SPSS (Statistical Package for Social Sciences).

Once the initial tabulation of data was complete, came the exploratory analysis, when missing data and (univariate and multivariate) outliers were, then, analyzed.

The sequence of the statistical treatment of data consisted of the use of LVPLS (Partial Least Squares) software, which is characterized as a predictive technique and suitable for the analysis of relations among more than one dependent variable and a group of independent variables.

Continuing the process of statistical treatment of data, multivariate analysis techniques were applied seeking the validation of the psychometric properties of the scales used in the research. Therefore, the exploratory and confirmatory factor analysis was employed to test the factorial dimensionality, and Cronbach Alpha was used to test the reliability of those scales.

## **STUDY RESULTS, REVALIDATION AND CREATION OF SCALES**

In order to revalidate and create the scales of the following constructs: Degree of Innovation of Training, Development and Educational Practices (GIT) and Degree of Organizational Modernity (GMO), the PC (Principal Components) and PAF (Principal Axis Factoring) analyses were employed, and revealed that both constructs had a KMO (Kaiser Meyer Olkim Measure of Sampling Adequacy) value greater than 0.95, meaning an adaptation of the matrixes to factoring. In the analyzed cases, two factors were indicated, confirming the hypothetical research model. Cronbach Alpha was also used to test the

consistence of the studied constructs, whose values were greater than 0.949, indicating an appropriate level of internal coherence.

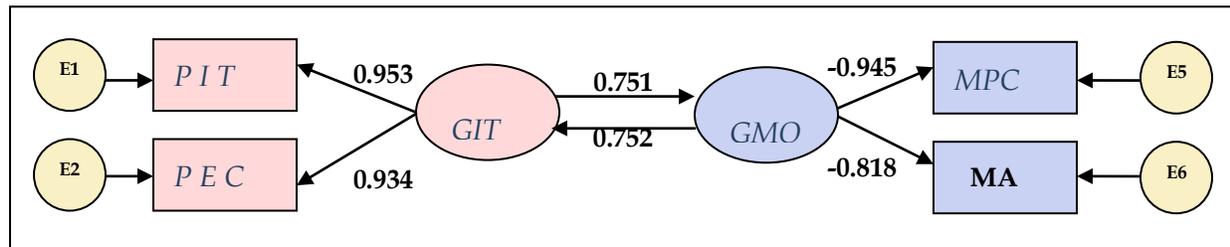
To the Degree of Innovation Training Practices (GIT), the factorial analysis unfolded in two different factors: Practices of Training (PIT) and Practices of Continuous Education (PEC), each containing specific indicators that were also submitted to factorial analysis confirmatory procedures.

Regarding the Degree of Organizational Modernity (GMO), analysis indicated a merger of the indicators *cultural modernity* and *political modernity*, resulting in a single indicator denominated *Political and Cultural Modernity (MPC)*. The other indicator, related to Administrative (managerial) Modernity (MA), was maintained. Therefore, it was not possible to entirely confirm the constitution of the facts proposed by Eboli (1996).

The parameters of the theoretical model were estimated by the software LVPLS, and the *centroid weighting scheme* of weight assessment was adopted. This method estimates the other latent variables directly linked to a particular variable (Lohmöller, 1984). PLS method is also known as partial least squares regression analysis. Wold (1981) developed the use this method in detriment of others. For the first time the method was used in econometric calculations, then it was applied to chemical researches, and used in the industrial, educational, marketing and social sciences fields (Garson, 2004).

The PLS is a predictive technique which can handle many independent variables, even when these display multicollinearity, so it is suitable to analysis of relations among more than one dependent variable and a group of independent variables. PLS is suggested as a prediction technique (Garson, 2004). The PLS can also be used for exploratory analysis, as an antecedent to interpretative techniques, such as multiple linear regressions and structural equation modeling (Garson, 2004). Therefore, the path coefficients appraised by LVPLS for the nomological-structural model were the following:

Figure 2 - Adjusted Theoretical Model - parameters estimated by LVPLS



Source: Adapted from Del Maestro Filho (2004) p. 193

The previous figure portrays the nomological-structural model of this study, which was adjusted after being submitted to factorial analysis techniques. It is important to stress that all components (constructs) of the referred model preserved its theoretical founding. The analysis of the components and main axes enabled the proper fitting of indicators, considering the peculiarities of the sample, and other factors. The previous figure highlights the relations involving the constructs and its respective indicators, and also shows the path coefficients estimated by LVPLS. The evaluation of those parameters considered other latent variables to which the one that is being analyzed is directly linked.

It is worth to point out that, in this work, the relations between the observed variables and the latent variables are reflective and, therefore, the parameters were identified by the loadings, according to the following Table:

Table 1: Estimated LVPLS Parameters - Measurement Models

Variable (construct)	Load (Loading)	Residue (1 - h2)	Commonalities (h2)	Redundancy (F <sup>2</sup> )
GIT				
PIT	0.9532	0.0915	0.9085	0.0000
PEC	0.9345	0.1268	0.8732	0.0000
GMO				

MPC	0.9395	0.1173	0.8827	0.4982
MA	0.8760	0.2326	0.7674	0.4331

Source: Adapted from Del Maestro Filho (2004), p. 194.

It is also noticeable in the previous Table that the commonalities (h<sup>2</sup>) calculated by the measuring model, reached values greater than 0.50, which is considered high, once the cut-limit accepted by some authors is 0.50 (Dias, 2004).

It is observed, on the one hand, that the largest loadings were accredited to the construct - Degree of Innovation of Training Practices (GIT) - measured by the indicators - Innovative of Training and Development Practices (PIT = 0.9532), and Continuous Education Practices (PEC = 0.9345), indicating the adaptation of the indicators in the representation of the referred construct. On the other hand, the most expressive levels of residual variance (1 - h<sup>2</sup>) were verified for the indicators Administrative (managerial) Modernity (MA = 0.2326) and (PEC = 0.1268). Those values indicate the presence of a part - related to the formation of the construct - that was not captured by the respective indicators. In a way, this can be acceptable, once the sample presents peculiar characteristics.

In order to evaluate the consistence of the model, the Q<sup>2</sup> (Goodness of fit) adherence test was administered, the results are systematized in Table 2.

**Table 2: Q<sup>2</sup> Test - Goodness of fit - Complete**

Construct	Indicator	Q <sup>2</sup> to indicator **	Q <sup>2</sup> to construct **
GIT	PIT	-----*	-----*
	PEC	-----*	
GMO	MPC	0.5537 > 0.000	0.3964 > 0.000
	MA	0.2390 > 0.000	
GIT2 (Inverse relation)	PIT	0.5521 > 0.000	0.4400 > 0.000
	PEC	0.3280 > 0.000	

\* Not measured for exogen constructs.

\*\* Significant, if higher than zero.

Source: Adapted from Del Maestro Filho (2004) p.195

According to the results obtained, and considering the observations to the inverted Likert scale, it can be said that the model presents adherence (consistence) among its constructs. This confirms the theoretical presuppositions, which ground the relations among the constructs.

The use of the LVPLS software enabled, still, to make one more validation test of the structural model. Hence, a Jack-Knifing's test was performed in order to compare the estimated path coefficients values against the results obtained by the test. It not only contemplated indicators, but also path coefficients. The results are showed in Table 3.

**Table 3: Jack-Knifing for Indicator**

Construct	Indicator	Construct load			* Trust interval at 5%	
		Estimated PLS**	by Mean average	Standard-deviation	Inferior Limit	Superior limit
GMO	MPC	0.939	0.939	0.0004	0.939	0.939
	MA	0.876	0.875	0.0010	0.875	0.875
GIT***	PIT	0.953	0.953	0.0005	0.953	0.953
	PEC	0.933	0.933	0.0011	0.933	0.933

\* Double-tailed Test

\*\* Significant within the trust interval

\*\*\* Inverse relation among GMO and GIT

Source: Adapted from Del Maestro Filho (2004) p. 199.

Therefore, the previous table data shows that LVPLS estimated values were confirmed by Jack-Knifing's test. This demonstrates that, regarding the indicators, the structural model has consistence, and the results indeed represent the researched sample. The use of the same test for validating the path coefficient also confirmed LVPLS estimated values for GIT X GMO (0.751), and for the inverse correlation: GMO x GIT (0.752). In other words, the estimated values are included by the (5%) trust interval. This means that the structural and measurement model indeed represent the perception of the researched sample.

## CONCLUSIONS

The main findings of this study were obtained through the perception of several managers, from many different companies - which made up the surveys sample - considering the proposed hypothetical model (Figure 3). It important to emphasize that the main constructs (Degree of Innovation of Training Practices, GIT and Degree of Organizational Modernity, GMO) of the referred model kept their theoretical characteristics. Each construct retained a number of indicators that maintained its nomological and structural integrity.

An individualized analysis allowed a reliable performance description of each construct. On the other hand, a group analysis can convey that the hypothetical work model presented good adjustment, attested by the estimated parameters (LVPS). The group analysis also evidenced that the existing relations among constructs are quite significant, and showed that training practices are strongly reflected by the degree of organizational modernization, and vice-versa. This means that organizations could be using innovative practices of training, which result from organizational innovation, and vice-versa.

The studied data revealed that the most adopted training practices observe the organizations cultural aspects and values. Such practices still, on one side, based in politics centered in the know-how, reflecting a traditional posture. On the other, it was noticed, also, that some practices relate to business' strategies, employees' education level, managerial participation in planning instructional events, and work performance. Those aspects are compatible to Castro's theoretical approach (1999), due to the predominance of issues related to organizational support and environment.

From the researched professionals' standpoint, some innovative training practices were really worthy of note: the availability of the events' contents through more than one media channel; the implementation of instructional events in schedules compatible with daily work routine; the realization of courses, trainings, and other events that motivate the employees' participation in the learning process.

These practices evidence a certain alignment of the organizations, not just wielding the logic of results, but also aiming the improvement of information flows, and higher involvement on the organization's strategic and business visions. This contributes to the articulation of work actions related to the new organizational perspective and dynamics. It also considers the *learning organization* ideas - widespread by authors such as Argyris (2000), Senge (1992) and others - due to the rise of internal environments favorable to continuous learning process (continuous education), as well as the occurrence of an organizational environment that is able to facilitate and develop team work and optimize decision-making processes' (Eboli, 2002).

Finally, concerning organizational modernization, the indicators were grouped into two factors: political and cultural modernity and administrative (managerial) modernity. This partly confirms Sant'Anna (2002) discoveries, once the original factors proposed by the author were condensed in a single factor, called MPC in this work. In that sense, once he no longer confirmed the indicators suggested by Eboli (1996), Sant'Anna (2002) discoveries were maintained.

It was also evidenced and proven the positive relation among the Degree of Innovation of Training Practices (GIT) and the Degree of Organizational Modernity (GMO). Such relation was also previously submitted to an already mentioned non-parametric test (Jack-Knifing), revealing a statistical significance, which enabled to conclude the existence of a positive relation among these two variables (GIT and GMO). That is, the LVPLS estimated values allowed to verify that the degree of organizational modernity intensely reflects the innovative TD practices and vice-versa ( $GMO \times GIT = 0.752$ , and  $GIT \times GMO = 0.751$ ). In average, the referred degrees were considered *moderate* (in a scale from 0 to 10) by the researched professionals.

Therefore, when concluding this synthesis of the results obtained by the present work, it can be affirmed

that the impact of innovative practices of training, development and educational on organizational modernization (and vice-versa) depends on the way those practices are jointly operationalized with modernization actions in the organizations, considering a competitiveness and result-oriented environment.

At the same time that a new organizational reality appears - from which demands for human competences - elapses; one can verify the coexistence, of innovative and traditional management models. In fact, the two degrees analyzed in this work were considered moderate, which attests the transition experienced by Brazilian organizations, especially the aspects concerning the innovation of TD practices and managerial models.

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