



Schools Management in the Complex Thinking Perspective

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Abstract: The scope of this Paper is to clarify the unfolding of Complex Thinking concerning the role of management, as a result of a research carried out in some Brazilian Governmental Schools, where the dialogical movements were understood in the whole context in which the linear and systemic aspects coexisted. The studies of the theory of Complexity are the bases of the reflections on the management action, enabling articulation toward the self-organization of the group. It is observed by many researchers that the action of the manager usually encompasses the role of a planner of the work, with rational use of the resources and articulation of the means to reach the targets of the institution, in addition to the role of coordination and control of people's work. That has shown not to be enough to meet the challenges of the world nowadays. The processes of management may get different meanings: under a technicist conception, management is often centralized, decisions come from the top without participation of the other levels; under a more democratic conception, the process is more participative, and decision is collective. In this view, the manager is expected to promote collective work, encourage the participation of the different subjects of the team and institution community, establish co-responsibility and assure the construction and implementation of a proposal – a set of intentions – a collective agreement. To be able to do so, the manager should be prepared to perceive the team as a living system, able of self-organization, as well as the linear and systemic aspects in permanent balance.

Key words: Complex Thinking, School Management, Self-organization, Sustainability

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INTRODUCTION

The strengthening of democratization represents a change in the net of power relations at the institution. The vertical flow of centralized command is replaced by more flexible horizontal relations. Power is not crystalized in hierarchical levels, but it is distributed among the teams of work which take responsibility for thinking and doing. Decision and action becomes complementary in the alive dynamics of the balance of polarities – not opposites as in the hierarchical pyramid. The dichotomy between planning and executing does not exist as mutually excluded. Instead, protagonism of those who share the same ideals for change increases, and they agree in taking a common task defined by negotiation of objectives. Success or failure of results are not attributed to a leader of command, but are the result of collective work. Control is much more related to follow up and evaluation of the process aiming at helping the subjects in their construction of responsible action. Plans of work are not imposed top/down nor outside/inside, but rather built, implemented and evaluated by the teams. Models make no sense, as the solutions come from the context, resources and degree of need and effort on the part of the people involved. This view of management actions expands as we reflected with the help of the Complex Thinking approach of Edgar Morin preparing managers to take decisions for sustainable development. Moreover knowledge and complexity and socially networked cultures are already an essential characteristic of progress in most developed countries as indicated by Hidalgo and Hausman from the MIT Media Lab; and that may now be even measured by the Economic Complexity Index (ECI).

FROM ADMINISTRATION TO MANAGEMENT

In the last two decades, the expression ‘school management’ was introduced in the Brazilian educational context, replacing ‘school administration’, with the aim of encompassing new skills of the school principal, in the process of democratization of the governmental school. In this sense, school management is understood today, at least legally, as a collective and participatory process, which governs the way the school works, involving decision-making, planning, implementation, monitoring and evaluation of an educational policy.

In this context, the school principal is in charge of the implementation of the collective decisions of school boards, as well as the coordination of the operations of the school unit. The manager is expected to encourage the participation of the members of the team and the school community, define responsibilities and ensure the construction and implementation of a pedagogical proposal, ie a body of intentions, a collective pact. The democratic management concepts are closely interwoven with the principles of citizenship, autonomy and emancipation, being a way to develop people for sustainability. Democratic management in school, in essence, is not a practice that can simply be instituted because it is a self-organizing process, coordinated by the manager, through participatory experience. This process is not mechanical, as social reality is extremely complex, the educational field is not neutral and the human being cannot be regarded as an instrument of production, distant from the natural world. Thus, the discussion on school management will be expanded below from the perspective of the complex thinking by Morin (2005a, 2005b, 2005c), covering the dialogical movement between linear thinking and systemic thinking.

LINEAR THINKING IN MANAGEMENT: HIERARCHICAL CONTROL AND BUREAUCRACY

Linear thinking, a hallmark of our times, tends to simplify reality, fragmenting it so it can be understood and controlled. It is appropriate for the treatment of mechanical and functional problems, but ineffective when dealing with issues that require a systemic view. Reason is overused, through rationalization, which perceives only the immediate answer, simplifying and reducing everything to simple causality.

The traditional model of school management, which expresses the linear, Cartesian and mechanist logic, has its recent origins in the Classical Theory of Administration, whose leading exponents according to Chiavenato (2000) are: the American Frederick Winslow Taylor and his studies on Scientific Management; the European Henry Fayol and the Classical Theory; the German Max Weber and the Theory of Bureaucracy.

One of the criticisms of the administrative models of Taylor, Fayol and Weber is the logical and deterministic approach of the organization, in which fragmentation and the mechanist division of labor prevail. Critical theorists of the twentieth century, guided by the Marxist conceptions, played an important role in denouncing the alienation in production processes and social relations of such administrative models. As a result of this alienation, human beings were pervasively prevented from understanding the nature and product of their work, as well as perceive themselves as human beings, part of a systemic nature where they are encompassed. The human dimension in its entirety was eclipsed by the excessive importance given to a fragment of a human being's capability: labor force.

The model and practice of school management, based on the classical management theory, served the purpose of the mass formation of a skilled labor for mechanical work. The structural model of the industry was reproduced in school by maintaining organizational efficiency, centralization of power and instrumental use of communication at the service of control of the production machine.

The ideals of discipline and obedience, plausible in the context of productivity optimization, have become the linear communication standards, desirable in the school environment in which subjectivities are hidden and unrecognized.

Even nowadays, schools are characterized by pyramidal power structure and the fragmentation of school work. In what concerns school organization, the division of labor in technical-administrative and pedagogical tasks is due to the value of specialization at work. The roles and responsibilities are defined through regulations, to maximize efficiency and to assure hierarchical control.

SYSTEMIC THINKING IN MANAGEMENT: A LIVING ORGANIZATION

While the linear thinking is effective for the analysis of the parts of a whole, systemic thinking is important for the understanding of the interdependence of parts. Systemic thinking can be represented by the web of life, as this is its very essence. It is a contextual thinking in the concept of Capra (1997, p. 46): "systemic science shows that living systems cannot be understood by analysis. The properties of the parts are not intrinsic properties but can only be understood within the context of the larger whole."

A system is a set of components that are related to each other. It keeps an organization and a structure. The organization defines the system's identity and expresses its configuration

through the essential features of its parts. The structure is defined by how the parts are related. The structure of the system changes during its existence, in permanent exchange of energy with the environment. It is an autopoietic system in continuous regeneration.

In the systemic thinking, the labor organizations are conceived as dynamic, not linear networks, as the mechanistic paradigm is not enough to explain them. For Capra (2002), human organizations resemble living systems. They cannot be controlled like machines, through instructions, because they react to the impositions.

Regarding the organization as a living being, there is awareness that the system is able to get self-organized, to learn, to change and evolve naturally, because its intrinsic feature is self-production. It is in constant circular retroactive movement, of own creation, seeking for sustainability in the balance of two paradoxical forces: autonomy and dependence.

The notion of human autonomy is complex and is directly related to the idea of dependence. According to Morin (2001), the subject depends on the environment in which he or she lives, learning a language to communicate, in order to acquire knowledge and generate new knowledge. These are fundamental perceptions to build an attitude towards sustainability.

The sustainable management of democratic school is based on the experience of the dialogic principle of autonomy / dependence, through the strategic coordination of actions and mediation of interpersonal relations. The living organization, in this case, is a self-eco-organizing system with relative autonomy, as it constantly interacts with exterior, and is able to create its own determinations and purposes.

Systemic thinking is necessary for the manager, as it allows him to view school life beyond the bureaucratic routine and formal / functional relations. School dynamics may be understood as a living being, a culture in permanent construction.

Democratic management can fit in this conception, for autonomy and dependence, in dialogical movement, are complementary polarities that characterize the emancipatory process.

An articulation action can be unveiled by the manager when understanding that the own power can be used to stimulate shared decision-making, in which he takes the coordinator position. Thus, he / she can create opportunities for him / her and his / her team to experience new relations and for the educators isolation scenario to assume new settings.

Systemic thinking is opposed to linear thinking, but both are embraced by complex thinking, so that reality is understood.

COMPLEX THINKING IN MANAGEMENT: DIALOGIC RELATIONSHIP BETWEEN LINEAR THINKING AND SYSTEMIC THINKING

Morin (. 2005a, p 151) explains that all organizational relationship produces antagonism with complementarity, ie, “[...] the complementarities that are organized between the parties secrete antagonism, virtual or otherwise; . dual and complementary identities coexisting in each part is itself virtually antagonistic “As in the TAO, a figure of complexity, the female principle yin contains within it the yang masculine principle, antagonistic and dormant; in opposite relationship, the male yang principle contains latency in the female principle yin. When a polarity reaches its peak, it reveals within it the seed of its opposite.

Linear thinking which is expressed in the bureaucratic matrix and systemic thinking characterized by the vision of the whole oppose dialogically, that is, are complementary

opposites, according to the interpretation of complex thinking (Morin, 2005a, 2005b, 2005c). The linear thinking and systemic thinking are always present in the same reality. The prevalence of one over the other may represent a simplistic attitude in the interpretation of reality, if they exceed, for example, in the particularization or generalization. Mariotti (. 2007, p 82) explains: "The holistic view is as reductionist as the Cartesian. One reduces to aggregation, while the other reduces by fragmentation."

The school organization reflects in its domain all the social complexity as it is a part of this. It is a cell of the social hologram, therefore it reflects inside the dynamics of the whole of which it is part. As society, it is also a living organism that is able to get self-organized. Metabolically (Moraes, 2004) it is in permanent reorganization or regeneration, in response to all processes of disintegration. Inside, the relations are ambiguous, appearing as complementary and antagonistic. Beside the movements of change, there are conservative forces, collaboration and resistance are forces which coexist, as well as order and disorder. A force is always in operation in response to the simplifying character of the opposite force.

Morin (2005a, p. 151) explains that all organizational relationship produces antagonism with complementarity, that is, "[...] the complementarities that are organized between the parts segregate antagonism, virtual or otherwise; the dual and complementary identity coexisting in each part is itself virtually antagonistic" As in the TAO, a symbol of complexity, the female principle yin contains within it the yang masculine principle, antagonistic and dormant; in opposite relationship, the male principle yang contains in it, in latent form, the female principle yin. When a polarity reaches its peak, it reveals within it the seed of its opposite.

With the vision of complexity on the school organization, it is possible to deal with the paradoxes that are perceived in everyday reality, which is predictable and at the same time unstable and uncertain. The school culture is ambiguous and has a contradictory character, because it has elements that stimulate innovation, as well as elements which contribute for conservation. Routine and emergent situations alternate; formal and informal relationships flow in parallel; ambiguities are natural in the game of convergence and divergence.

Understanding reality from the perspective of complexity is to realize that there is a creative tension between the polarities depending on contradictions. The opposites are fed by this contradiction and the dialogic relationship is maintained, while new properties emerge that feed, as a recursive ring, the balance game of polarities.

The school is a place of conflict, of dialogic encounters that generate creativity. The subjects have different interests and values from each other that can be negotiated through dialogue. The dialectic can be helpful in finding a consensus whenever possible. A dialogics is necessary in situations where tensions remain, and also in what concerns diversity. The words by Mariotti (2007, p. 154) complement the idea: "Being able to distinguish when employing dialectics and dialogics is a highly strategic skill."

Conflicting situations are not only found in schools, but are part of the social fabric. They are the result of confrontation of ideas, in all social issues, especially of political nature. In fact, it is they that are reflected in the school. An example of this is the paradox in which managers are in the task of mobilizing educators for participatory and co-responsible building of a political-pedagogical project.

Thus, the management action faces a conflicting reality, explicated by De Rossi (2006), whose interests and values emanate from two distinct and contradictory forms of reasoning: the regulatory one and the emancipatory one. The linear reasoning of regulations is at the service of public policies that are governed by the market economy and are extremely concerned with quick results, while the emancipatory reasoning regards the socio-political citizenship construction as a process.

A major challenge for the school manager is to encompass the coordination of bureaucratic and educational activities in such a way they express a relationship of interdependence. In practice, there is a division of activities due to the technicist culture still prevailing in governmental schools. The educational activities tend to be under the supervision and full responsibility of the coordinators, while bureaucratic activities monopolize all the time of the school manager. This split is due to a fragmented and reductionist vision of school teams who base their actions only in the list of regulations drawn up by school assignments. They lack a vision of the whole, a perception of the systemic reality.

Educational and bureaucratic doings are imbricated in the democratic and complex dimension. The bureaucratic tasks, called 'the means', are necessary to give support to the school routine, to the maintenance of the infrastructure, the implementation of the projects, in short, to give life to the intentionality of the formative educational process. Otherwise, if they are valued as 'core activities' they will assume a linear and instrumental character. On the other hand, the educational activities are made viable through the bureaucratic structure and legal boundaries.

Bureaucracy is also ambivalent. It has an operational and rational characteristic, as it encompasses working methods and applies impersonal rules to ensure the good work of the organization. However, this same bureaucracy can be manipulated by rationalization, running the risk of becoming an administrative blockage, to the extent that the real purpose is distorted.

Besides the bureaucratic and routine activities, there are planned actions. The former are predictable and resemble rigidity, the latter are focused on uncertainty and emerging elements. Planning is a more strategic action, as it works in the field of unpredictability and flexibility, in opposition to the program through which everything is done by automation (MORIN, 2000, 2001).

In addition, planning, in the complex and democratic dimension, is an activity resulting from collaborative movements inherent to participatory spaces. They emerge and are consolidated as leaders and their teams do not arise as mutually exclusive opposites. In this case, management is not exercised with authoritarianism, but gains recognition and legitimacy when there is respect and value of individuality and diversity. The balance between the polarities is maintained because the focus of the changes remains on the interests and meanings. Significant disturbances act naturally in organizations, perceived as self-organizing systems, without having to undertake a mechanical effort to put them in motion.

These impulses may trigger structural, unforeseen changes. Under these conditions, intuition, according to Motta (2001) shall be valued in the action of an officer, beside the analytical rationality, as it produces the global vision required to cope with ambiguities and uncertainties which are present in the emerging situations at work. What is desired is a balance between order and chaos, logical and illogical elements, rational and intuitive ones.

In modern organizations, communication of inter-subjective nature emerges at the heart of management practices, concomitant with the reduction of both, relations of subordination and use of communication only to transmit orders and guidelines.

In contemporary management, the concept of authentic communication arises in professional activity. According to Zarifian (2001, p. 165), it is “a process by which reciprocal understanding is established which leads to a shared meaning, resulting in further understanding of the actions that those involved take together or in a convergent manner.” This meaning is transformed in the course of this communication according to the viewpoint exchanges and explicitation of common needs. From the reflective dimension of meaning, that is, the subjective and practical redesign, the subject directs his / her thoughts and actions, undertakes the own change in face of the events or problems that have made a pre-existing situation lose stability. The expression of that individual dimension is the mark of freedom of the subject, an attribute of civility in modern society.

However, authentic communication is related to expressiveness, that is, in the right to freely express the personal meaning that is contained in the thinking and action, in relation to the partners of communication, as well as the power to express this sense in the initiatives concerning ideas and the doing with autonomous responsibility. Thus, the individual assumes the causality of the own actions.

In line with this, there is a dialogical relationship in the management action, that is: to assert an idea or action in terms of the management skills to direct and control, and at the same time, use authentic communication as a source of reflection on the challenges of the company and the subjective engagement of the individuals who compose it.

Thus, the interpersonal relationship based on the authoritarian model of obedience, and control gains a new meaning by the collaborative model, which values friendship, cooperation, fellowship and consensus. While the first model exemplifies the patriarchal culture and is based on distrust and desire for domain, the second is related to the matristic culture, recognize trust as the principle of interpersonal relationships.

Mariotti (2000) summarizes the essence of these two matrixes according to their characteristics. The patriarchal culture is described as an expression of linear thinking, which, in turn, is guided by the need to control nature, to encourage competitiveness, to use deterministic discourses of exclusion, based on immediacy and dichotomies such as good / bad, friend / enemy, and others.

The matristic culture, representative of complex thinking, is distinguished by understanding the human being in tune with nature, by the participation, solidarity, inclusion, as well as acceptance of reflection on paradoxes and differences.

CONCLUSION

The articulating action of School Managers is a complex undertaking, but not complicated. It turns around the key words, like: democratic management, participation, autonomy, emancipation, and others of the kind. The change is systemic, but it requires the manager's attention to the context and at the same time, the value of educators. Looking at the whole and the parts, without losing sight of the intersubjective plot. In other words, taking care of the atmosphere of the school is crucial for the members of a work team to find pleasure and meaning in their work on a self-sustaining movement, helping students develops attitudes of a sustainable world.

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