Corporeality and epistemology of complexity:
through an experiential educational practice*

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Abstract

This study was devised in order to present a didactic-methodological proposal based on a complex vision of human beings. The search for this notion of a human being, the philosophical assumption of any pedagogy, stems from the need to think of an educational practice that takes on the various human dimensions inherent to this process and goes beyond the perspective of a fragmentary education. As such, the concept of corporeality, based on Edgar Morin's work The Method, is introduced. This article offers a complex epistemology that points out ways for combining the three great spheres of knowledge, that being physics, biology and anthroposociology, from three epistemic principles: recursive, dialogic and hologramatic. The concept of corporeality is grounded based on this epistemological perspective. It allows for an understanding of the human being in four intrinsic dimensions: physical-motor, affective-relational, mental-cognitive and socio-historical-cultural. Provided with this conception of human being, the foundations and principles of the experiential learning method are revealed, along with a structural model for planning experiential classes. Lastly, the study seeks to theoretically demonstrate that this teaching method is a didactic-methodological approach that is consistent with the interdisciplinary and transdisciplinary curriculum proposals. It also facilitates an educational practice that intends to: teach the human condition, teach experiences, teach how to organize and reconnect knowledge and recreate a school of citizenship.

Keywords

Corporeality – Experiential educational practice – Epistemology of complexity.

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Introduction

Discussions over the issue of corporeality in the field of Physical Education (PE) provide a set of theoretical perspectives (DAOLIO, 1995; FREIRE, 1991; GONÇALVES, 1994; SANTIN, 1987; SÉRGIO, 1989) seeking to establish a vision that goes beyond dichotomies and simplifications for an understanding of the relationship between body, mind and culture-society, as well as to propose a conception of the human being, assumed as a pedagogical principle, to foster the development of corporal educational practices. By bridging this to the pedagogy field of knowledge and retaining the same aforementioned purposes, corporeality is presented as a conception of a human being for education, coming out of a perspective that recognizes the complexity of the human condition and that proposes a way to employ it in educational practice.

The concept of corporeality defended in this paper is based on The Method by Edgar Morin (1986, 1997, 1998, 1999, 2002). This article establishes an epistemological basis and introduces a theoretical proposal, specifically relating to a notion of corporeality, which reveals and builds bridges that enable communication between the various areas of knowledge and, simultaneously, between the numerous dimensions that form the being human. The uniqueness of the work enables a complex vision to be established with respect to the human being, recognizing the relation between the whole and the parts that constitute it, but without claiming to deplete the understanding of the parts and, as such, of the whole.

The delimitation of this concept of corporeality from the work of Edgar Morin, as well as its impacts on pedagogical practice, were presented in studies by João (2003) and João and Brito (2004). In this paper, the theoretical reflections that will be generated present a didactic-methodological proposal drawn from the concept of corporeality. Known as an experiential learning method, this proposal is imbued with the hope that, through this relation between the conception of human being that is adopted and the reciprocal coherence with methodological principles of teaching, a discussion will be set to aid in the development of thoughts and of practices that can lead us to an establishment of a proposal on overall education.

With this in mind, the goal that guided this work was to set forth theoretical thoughts for a didactic-methodological proposal based on a view of human corporeality drawn from the epistemology of complexity.

Worldview, human being and society: Three assumptions of educational philosophy

Education is a human practice that follows the history of the human species. Human beings have always educated, striving to direct human existence in its various aspects. As pointed out by Anísio Teixeira (1969, p. 9 apud LUCKESI, 1991, p. 31):

> [...] long before philosophies had come to be expressly formulated in systems, but as for education as a process for perpetuating culture, it was nothing more than a means to convey the vision of the world and of man, which respective society honored and cultivated.

However, initial forms of education were not accompanied by a critical and systematized thought, they did not constitute a body of organized knowledge. In western though, it was only with the advent of philosophy in Ancient Greece that knowledge sprang out to produce a critical, systematic and organized reflection, achieving the status of being a rational knowledge. Since that time, philosophers have crafted philosophical systems that incorporated thoughts on education, and they have been organized in educational concepts based on their cosmovisions (worldviews).

A philosophical concept of education is the foundation of pedagogy or a pedagogical trend. The philosophical conception of education, a pedagogical trend, is rooted in the worldview of a specific philosophical system. That is to say, a philosophical system renders reflections that comprise a body of knowledge, seeking to understand the world and existence, giving it a sense and meaning that guide human action. A philosophical notion of education is proposed through this specific way of understanding the world; a pedagogy (LUCKESI, 1991).

A pedagogy is devised and determined from a worldview. The worldview of a philosophical system involves a vision of being a human being, a way of understanding it, a definition that looks to explain what it is. Furthermore, it brings forth a perspective of society, a way of formulating and establishing a social organization.

These three dimensions of a philosophical system, worldview, human being and society, are prevalent as three central assumptions of philosophical thought on education from this same philosophical system. It is from those aspects that a pedagogy is based (a philosophical conception of education) and, as a consequence, channels and creates a pedagogical practice.

The considerations that have been tabled thus far facilitate an understanding on the importance of selecting and expressing the construction of a concept of a human being as a research topic, indivisible from its vision of the world and of society, and from there to delineate a didactic- methodological approach to educational practices. The proposal that will be outlined throughout this paper is intended to express a conception of human being that recognizes and encompasses the various aspects that form the human condition.

The goal of this article, as such, is to exhibit a monistic-based position of the conception of human being - one that recognizes the inseparable relationship between the various dimensions that form the human being and, similarly, point to the necessity of a didactic-methodological proposal that makes it possible to deal with this inseparability of human dimensions.

An epistemology of complexity for corporeality thinking

So as to defend an epistemology of complexity as a matrix for thinking and defining a notion of corporeality, the specificity of such epistemology needs to be clarified because different epistemologies are found in a broader context, from which other conceptions about corporeality are proposed. That being the case, a brief look at the problem of complexity should be spotlighted for the purposes of this paper.

But first, the word complexity should be examined. As Morin explains (1990, p. 7), "the word complexity does not have a noble heritage of philosophy, science or epistemology." This is because scientific knowledge was conceived from the mission to clear up the apparent complexity of phenomena in an effort to reveal the basic order they abide by. Seen in these terms, considering that its tendency towards simplification caused the mutilation of the investigated phenomena, making it impossible to understand what was initially identified as apparent complexity, the need to confront this complexity of phenomena and realities in a non-simplified way is recognized.

On these grounds, considering that the word complexity bears a heavy semantic load because it carries with it a sense of confusion, uncertainty and disorder, there is a need to explain that what is complex can not be summarized in one master word, nor reduced to a law or a simple idea. In other words, the complex can not be summarized in the word complexity, it can not be reduced to a law or idea of complexity. On this, Morin (1990, p.8) asserts that complexity is a problem word and not a solution word.

Hence, there is a clear need for a complex thought to be progressively constructed along a path, in the same sense that the word method brings, but in a way to recognize that it is a path without a path, a path that is constructed along the way. In it, the limitations, insufficiencies, and shortcomings of simplistic thinking are recognized and, subsequently, the challenges of complexity imposed by phenomenological conditions (MORIN, 1990).

By properly assuming the problem of complexity, Morin ([1980?], 2000) asserts that it is surprising that it did not emerge as much in epistemology as in the philosophy of sciences. As far as the important and decisive Anglo-Saxon debate on the philosophy of sciences is concerned, with the contributions of Popper, Kuhn, Feyerabend, Lakatos, and others, the problem of complexity nevertheless has still not been posed.

However, and despite not being discovered and understood in the context of the philosophy of sciences, as Morin ([1980?], 1990) explains, Gaston Bachelard was a philosopher who spoke profoundly on complexity. In addition to the issues posed in his work by the second law of thermodynamics to cybernetics and to information theory, the need for science of complexity will be proclaimed, although the word complexity for the contexts of these theories has the sense of being a a tangled web of actions, interactions, and informational retrospection that neither the human mind nor a supercomputer could handle.

Related to the philosophical tradition, Morin ([1980?]) posits that the issue of complexity has emerged at different times in the history of the philosophy. From Heraclitus to Hegel, all those who have faced the problem of contradiction were thinkers of complexity. Pascal, in his explanation on the complex relation between the whole and the part and the part and the whole that constitute all phenomena; Leibniz, with his monadology; contributions by Marx and contemporary Marxists, like Georges Lukacs, in stating that the complex must be conceived as an existing primary element (MORIN, 1990). And lastly Wittgenstein, from linguistics, who highlights the difficulty of the word that wishes to grasp the inconceivable and the silence.

The problem of complexity is briefly explained in an overall way in philosophy, and in the philosophy of Anglo-Saxon science. Morin ([1980]) emphasizes its relationship with two foundations of scientific knowledge that, in a positivist view, were safe and absolute:

the objectivity of scientific statements established by empirical verification and logical coherence of the theories that were based on these objective data.

In the progression of epistemological discussions throughout the twentieth century, these fundamentals faced criticism by the Anglo-Saxon tradition itself, which had initially come from a positivist stance, echoing in the general context of the philosophy of science. Likewise, the tradition of the Frankfurt School and its diverse critiques of positivism, and specifically the foundations of scientific neutrality. The crisis of these foundations, in conjunction with other evidence of the mutilating character of scientific knowledge, according to Morin's ([1980?], 1986-1996, 1990, 2000) understanding, suggests the need for an epistemology of complexity.

Morin took on *The Method* in an effort to move towards confronting the obstacles and limits of a simplified thought, which unilaterally establishes the disjunction between the phenomenal entities, keeping them separated and closed in on themselves, reducing them to a simple element and expelling that which does not fit in a linear motion. This is the work in which the epistemological principles are established from a knowledge that recognizes the complexity and initially builds up the bridges between the three spheres of knowledge: physics, biology and anthroposociology, going towards the multidimensionality of reality.

In short, as Morin (1986-1996) explains, the epistemology of complexity proposes three principles for knowledge production: the recursive, allowing the processes to be recognized in which the products and effects are needed for their creation and their causation; the dialogic, allowing a recognition of the phenomena in which antagonistic, or even contradictory terms need to be connected in order to grasp its reality; and the hologramatic, permitting a recognition, in everything that is complex, that not only is the part in the whole, but the whole is in the part.

Epistemology of complexity: a thought that recognizes the circularity of phenomenal processes

At the paradigm level[2] the epistemology of complexity proposes the junction of as yet disjointed notions, associates that which was considered antagonistic without ignoring antagonism. It establishes a recursive circuit of knowledge (recursiveness), construed from the loop notion, working with the isolated and connected, as well as with the analysis and the synthesis. For this reason, it does not reject the simplification/disjunction, but makes it the relative principle. By the same token, it does not repel the analysis and the isolation, but requires that it not only be included in a metasystem, but in an active and knowledge-generating process as well (MORIN, 1997).

2- The definition of a paradigm proposed by Morin considers that "a paradigm contains, for all the discourses that take place under its domain, the fundamental concepts or master categories of intelligibility at the same time as the type of logical relations of attraction/rejection (conjunction, disjunction, implication or others) between concepts and categories." (1998, p. 268). In this author's perspective, we can see the existence of a great paradigm from the West formulated by Descartes and spread throughout European development since the 17th century. This paradigm has established sovereign concepts and prescribing the logical relation – the disjunction.

This way of thinking that seeks to assume the complex was raised by the challenge of coordinating discoveries in physics at the epistemological level, taking place throughout the process that went from the second half of the nineteenth century to the end of the twentieth century. For example, Morin (1997) emphasizes the conception of an absolute order in the cosmos, referred to the Newtonian conception, and the idea of disorder within the same apparent mechanical order, stemming from the new developments in thermodynamics that were coming from Prigogine.

On the basis of these and other questions brought by physics and biology throughout the 20th century, the epistemology of complexity suggests a new kind of junction of key notions, which Morin (1997) referred to as a tetralogical loop[3] (Figure 1):

Figure 1 – the Tetralogical loop

Source: Morin (1997).

The tetralogical loop, extracted from cosmogenesis, assembles the ideas of disorder, interactions, order and organization up to then separated by the logic of classical science, in a relationship that is simultaneously complementary, concurrent and antagonistic, situated at the heart of *physis*[4]. The importance of the loop is in our need to conceive, disorder and order, among other things, one into the other, co producing it.

These notions are relative and relational with each other, introducing logical complexity, that is, "we must put disorder in the notion of order; we must put order in the notion of disorder" (MORIN 1997, p. 79). What this means is:

> The fundamental linking must be of dialogic nature[5], [implying] in a symbiotic unity of two logics, which simultaneously nourish each other, compete against each other, live off each other, oppose and combat each other to death. (MORIN, 1997, p. 79).

Consequently, in logical terms, complex thinking enables the construction of a thinking that grasps the relation between aspects that, up until then, were and still are considered antinomic and dissociated.

3- The idea of the loop is defined from the notions of retrospection and recurrence. The first refers to the retroactive character of the process on itself, "of the whole on the particular moments and elements whence it came". The second expresses that "the end of the process feeds the beginning, by the return of the fina1 stale of the circuit on and in the initial stale: the final becoming in a way the initial Stale, while remaining final; the initial state becoming final, while remaining initial" (MORIN, 1997, pp. 173 and 175).

4- The idea of *physis* means that the physical universe must be conceived as the place of creation and organization itself. *Physis* is common to the physical universe, to life, to man (MORIN, 1997, p. 31).

5- As Morin (2002a, p. 300) posits, "it differs from Hegelian dialectics. In Hegel, contradictions find a solution, are overcome and suppressed in a higher unity. In the dialogic, the antagonisms persist and are constitutive of the complex entities or phenomena."

The concept of corporeality in the perspective of complex thinking

For a presentation of the concept of corporeality from the epistemology of complexity, the relevant notion of a system as a complex organizational unit should be explained. According to Morin (1997, p. 102), a system is a set of different, united and organized parts and presents itself as *unitas multiplex*. In other words, a paradox permitting an understanding that "considered in respect to the Whole, it is one and homogeneous; considered in respect to the components, it is diverse and heterogeneous" (MORIN 1997, p. 102). This points out the need to consider the system as a complex unit, or better, the whole can not be reduced to the parts, just as the parts can not be reduced to the whole, neither the one to the multiple nor the multiple to the one. The notions of a whole and parts and of a one and multiple must be developed in conjunction, both in a complementary and antagonistic way.

The notion of system as a complex organizational unit allows us to understand human corporeality in its multidimensionality, composed from the emergence processes[6] taking place throughout the evolution that was conducted, as João and Brito elaborate on (2004, p. 266):

> [...] the *physis*, the *bios* and the anthroposocial sphere to successive increases in the degree of complexity of the systems/organizations, starting with the formation of atoms arriving on our planet, where the evolution of species takes place, the emergence of the human species.

With this in mind, corporeality guards the inheritance of this entire evolutionary process, configured as a multidimensional unit, where we can identify different dimensions that are subsystems (parts-whole) of a system (whole-parts) that characterizes human subjectivity that, in turn is part of larger systems constituted in human societies-cultures.

In light of complex thinking, a human being can be defined as "being a physical/corporal and complex being, and all the qualities and dimensions belonging to the human rooted in its body" (JOÃO, 2018, p. 46). It is through the body that we can identify the being, the existence and the condition of an individual-subject, which refer to the complex organizational unit (corporeality).

Hence, corporeality is made up of dimensions: physical-motor (organic-biophysical-motor infrastructure organizing all dimensions of individuality), affective-relational (instinct-drive-affection), mental-cognitive (attention, memory, reasoning, problem solving, reflexive consciousness) and socio-historical-cultural (values, habits, customs, senses, meanings, symbolisms). All of these dimensions are inseparable in the multidimensionality of the human being and comprise the human's corporeality. It's for this very reason that we seek an understanding of the human complexity at both the individual level as well as the social level.

6- Emergence is a new quality in relation to the components of a system. It has the virtuousness of event, because it surges up discontinuously once the system has been constituted; it has the character of irreducibility: it does not allow itself to be decomposed and one cannot deduce it from previous elements. For a better understanding of the concept of emergence, see Morin (1997, p. 103-108).

As previously stated, human corporeality is the result of a long process of evolution that drove the *physis*, the *bios*, and anthroposocial to successive increases in the degree of complexity for systems/organizations. This relationship between the four dimensions of corporeality and these three key dimensions of phenomenal reality were the subject of analysis in works by João and Brito (2004) and João (2018).

With the conception of corporeality outlined above, the key discussion of this article can be given: to consider corporeality as a principle of pedagogical practice, from which a didactic-methodological proposal is structured that can involve the four dimensions that constitute the human being. The goal is to contribute to an educational practice that assumes the human complexity in the classroom.

Experiential learning method: prospects for a comprehensive education that assume the human complexity in pedagogical practice

The introduction of the concept of corporeality as a theoretical reference to the educational process provides four fundamental consequences: 1) it presents a monistic conception of human beings that will make it possible to overcome a long educational tradition that focuses on cognitive development at the expense of other human dimensions; 2) it allows our human condition to be recognized, that is, individual/ species/ human society, and the complexity that it involves; 3) it makes it possible for us to touch on complexity as a way of approaching the real and, consequently, of pedagogical practice; and 4) it drives the need to rethink teaching methods.

In order to present a didactic-methodological proposal that attempts to engage the four dimensions of human corporeality and to develop the educational goals suggested by Morin (2002b) , the following foundations and the principles of a experiential learning method will be proposed – 1) teaching the human condition; 2) teaching how to live, 3) teaching to organize and reconnect knowledge (teaching to think for the unity of knowledge), and 4) redoing a school of citizenship.

The method is integrated into an interdisciplinary and transdisciplinary approach under an epistemological context of didactics (FRIAÇA et al., 2005; TAUCHEN; FÁVERO; ALVARENGA, 2017), so that the conception of corporeality defended in this paper is adopted as a teaching principle for planning curriculum involving Basic Education or Higher Education that stem from these approaches. Its ultimate intention is not to teach the contents of subject areas, but rather in developing the unity of knowledge through its link to other proposals, like Paulo Freire's pedagogy of autonomy with its generative themes, and the cross-sectional methodology of teaching proposed by the *National Curricular Parameters* and its cross-cutting themes, while taking the epistemological, theoretical and methodological differences of these proposals into account.

Bearing this in mine, the principles that constitute the experiential learning method will be exhibited, introduced as a didactic-methodological possibility that involves the four dimensions of human corporeality. These principles and fundamentals do not exhaust the possibilities of the teaching/learning process. On the contrary, they merely represent basic reflections to create a pedagogical practice that presumes the human and educational complexity.

The notion of learning

The notion of learning related to the experiential learning method was mainly refined out of the contribution of a proposal formulated by Leite and Ferreira (2002) called the System of Experiential Learning and from reflections between the aforementioned notion of corporeality and the ideas from these authors. Learning is conceived as a whole and continuous process that is geared towards expanding the existential repertoire and raising the awareness within each person and in their multiple interactions with the natural and social environment. These interactions occur in the direct contact between the learners, the methods outlined above and the curriculum contained in each discipline.

Learning is also viewed within the framework of having new information permanently assimilated, but in a way in which it is inseparable from its continual subjective redefinition and reappropriation, resulting in the construction and refreshing of each pupil's personal identity, in the perception of their inclusion in communities, institutions and, in a broader way, their social integration (LEITE, 1999; LEITE; FERREIRA, 2002).

The permanent assimilation of new information drives the student to continually change. We can view change as a learning process, or rather, relearning, where new potential responses are created for day to day requests.

Learning is not merely a cognitive process and a rational interaction. In order for human, personal or professional relationships to become effective in a process of change, they should be subject to reflection and integrated learning, in which integration takes place in the complexity of the human being in all its complexions: cognitive, affective and motor, and also encompassing its multiple dimensions: personal, professional and institutional (LEITE, 1999; LEITE; FERREIRA, 2002).

According to Leite and Ferreira (2002), the *praxis* aspect of experiential learning is found in the interlinking and interdependence of its theoretical and practical factors, which is maintained in a way of thinking about the world and a concrete and coherent action with what it theorizes.

Accounting for the fact that human life is an on-going process of learning that leads to the improvement and development of human potential, the experiential learning method strives to encompass this scope of learning through experiential learning at the time of the class. By admitting that the experiential learning process takes place in the interaction of man with the natural and social environment, running a probabilistic course of evolution (LEITE; FERREIRA, 2002), and that the time of the lesson keeps these multidimensionalities, the classroom is emphasized as a moment of this continual process of learning, just as life is.

Principles and foundations

The first principle of the experiential learning method generally denotes the need to convey knowledge by means of experiencing[7] the corporeality through an

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[7] The experiential nature does not necessarily determine the active corporal involvement in the teaching-learning process, but points to the involvement and the handling of the four dimensions at the time of this process.

experiential pedagogical practice, using diverse corporal techniques, different types of games, group dynamics, theatrical activities, etc., contextualized in the content of the various curricular subjects.

According to Leite (1999), the primary conceptual and operational barrier related to traditional education is linked to the dissociation between existing conceptions of corporal work and intellectual work, given that the experiential learning is inserted into a context that overcomes this body-mind dichotomy. This first principle is grounded in looking at learning as the unity between vital and cognitive processes, as Assmann (1998) suggests, framed in what this author refers to as the learning corporeality and which is linked to the conception of corporeality explained here.

Following the presentation of the aforementioned assumptions, the second principle features the following assumptions for educational purposes: to teach the human condition, to teach to live and, as a result, to teach to organize and reconnect knowledge (teach to think) and to reformulate a school of citizenship (MORIN, 2002b). These goals allow us to propel the learning process for the simultaneous development of the four human dimensions, or rather, of human corporeality.

The third principle is made through the development of self-observation, self-reflection and self-analysis,[8] determinants for carrying out the learning process. Using these tools, the student can have a sense of themselves in the midst of this process, becoming conscience of the aspects that constitute their condition and pursuing a form of conduct that integrates these aspects into the relationship with themselves, with one another and with the social environment.

In recognizing the complexity and multidimensionality of the human being, the experiential learning method includes a fourth principle of its practice that deals with the concern over making the individual's access to the construction and experience of their identity possible. In relating to the world/environment and disassociating from it, the individual experiences all their organizational complexity and feels it in their individual existential integrity (LEITE, 1999; LEITE; FERREIRA, 2002).

The conditions for carrying out the experiential learning process stem from the composition of integrity (the individual must be present in their entirety) and integration (the individual must be open to interact with the environment), which form the fifth principle of the method described here.

According to Leite and Ferreira (2002, p. 27-28), the performance of experiential learning attempts to link human needs with "the ecological principles of life", which account for the"emergences" and "impositions" that stem from the contextualization of the human being in correlation with the social environment and ecosystem. The human being is thus subjected to internal and external regulation, delimited socially and ecologically (by culture and by nature), which defines both their potential and their limits, their deficiencies and their life plans. From this relation, the need to refresh and develop

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8- The theoretical basis of these concepts are formulated in João (2003).

human potentials emerges within the organizational complexity of life, forming the sixth principle[9] adopted by the experiential learning method.

The seventh methodological principle of the experiential learning proposal outlined here involves the close and recurrent relationship between therapeutic, pedagogical and prophylactic aspects. The therapeutic effect facilitates the ability to overcome the inhibitory mechanisms of the experiential learning process. The pedagogical aspect:

> [...] is the development of a person's ability to learn from their own evolutionary process, arranging their experiences in increasingly complex ways and sharing this learning with others. (LEITE, 1999, p. 15).

The prophylactic function is revealed in the potential of:

> [...] expand the ability in the individual to identify dissonance processes and become aware of their deficiencies; then moving forward to reorganizing and redirecting their path, increasing their resonance with life. (LEITE, 1999, p. 15).

The seven principles mapped here are the fundamentals of the experiential learning method. When these principles are applied, they go through the planning for the stages of a lesson. They are configured in a structural model, which distinguishes the proposal of a lesson plan for this method. None the less, this structural model does not strictly determine the sequential organization for the stages of each lesson. They can be configured differently according to what content will be taught.

Structural model for planning experiential classes

The structural model for a lesson plan is generally set in the following ways: a) initial dynamics; b) central experience; c) evaluation of the experience. So that the targets for each stage of the lesson can be described, a specific explanation of each one will be introduced.

The first dynamic attempts to build up the ability of students to be mentally attentive at the present moment of the class. Using attention development techniques, it attempts to guide students to focus attention on the body itself, on their parts and on breathing. This experience lets them exercise the development of the cognitive ability to construct a meta-point of view; to exercise the observation of the flow of visual and acoustic images that make up the different subjective states that are being formed in the subjective experience of the student. In other words, to be able to observe themselves with some distance.

9- The creation and improvement of human potential work together by: 1. considering the impositions of ecosystem limits and subjecting human development to the ecological principles of life; 2. making it possible to access to the organizational complexity of life; 3. facilitating human interaction: a) with the natural environment - through respect for ecological standards related to the environment; b) with the social environment - based on relationships constructed from communication and group contact and social inclusion; c) the cosmic medium - creating a worldview based on the unique and at the same time diverse perception between the physical, biological and human world. (LEITE, 1999).

The central experience corresponds to the main stage of conveying content through an experiential experience (LEITE, 1999; LEITE; FERREIRA, 2002). The theoretical-conceptual content in the perspective proposed here referred to a cross-sectional issue or generating theme and/or one or more curricular subjects that will be adopted in a certain class. It is transformed into an experiential experience from the interaction between learners in a way in which they can experience in practice, and at the time of the lesson, the meaning of this content.

By and large, this stage is subdivided into three occasions: warming up, experimenting and processing. The warm-up is intended to prepare the people and the group for contact with themselves and with the others. It is divided into a thematic, corporal and interactive warm up, with each of them reserving a more specific goal (LEITE, 1999; LEITE; FERREIRA, 2002).

Leite (1998 apud PIEREZAN, 2002, p. 47) posits that "the challenge of the warm-up is to awaken an open-mindedness to this contact in people, sensitive to themselves and to others, because they are not always open-minded". In day-to-day human relations, people maintain contact with one another in an objective manner and with a bit of mistrust in some cases, which does not allow for openness and the exchange of subjective aspects between them.

The experiment is the application of the proper experiential dynamics, which translates the theoretical-conceptual content into an experiential experience; it is the place where the core events take place in the experiential approach. The experimental nature of the situation facilitates action, reflection and learning under more favorable conditions. These experiments are intended to build the capacity to take risks, to put them into practice and to become conscious (LEITE, 1999).

The experiment is primarily based on the first principle of the experiential learning method, which, is rooted in the notion of corporeality learning. The moment of the experiment brings out the complexity of the students' corporeality from their interactions and relations. This complexity brings with it the conjunction of the four dimensions (physical-motor, affective-relational, mental-cognitive, socio-historical-cultural), acting in constructing the experiment. Each student and group's subjective experience is linked to the objective experience of dealing directly with each other, with a theme (theoretical-conceptual content) and to the subjectivity itself, or better, the subjective and objective experience are simultaneous, recurrent and retroactive, constituting a whole (corporeality), at the same time they are part of this whole.

Considering the retroactive nature of experience, corporeality as the whole regresses on itself in the objective and subjective experience that, while being parts, can go back and reinforce the corporeality, which in this case is the whole. With respect to the recurring aspect, it can be understood that the final results of the objective and subjective experience of corporeality produce the initial states and initial causes of a new experience for the students.

The significance of clarifying these aspects of the experiment process lies in comprehending the complexity of this experiment and in understanding the principles of the learning process. Retrospection and recurrence are underlying principles in the experiential learning process.

The final role of the central experience is the processing (LEITE, 1999; LEITE; FERREIRA, 2002). This moment acts to organize and link the students' statements with the more detailed explanation of the theoretical-conceptual content through an open discussion that creates the linking of these experiences with the students' lives, in this way making learning and knowledge building possible.

Also, as Leite (1999) suggests, the processing generally refers to the set of activities performed to provide a structure for the life experience. It should be pointed out that this processing is not limited to cognitive development, but also incorporates the psycho-emotional and motor levels of experience. Hence, both the creation of cognitive maps and emotional expression and corporal experience are considered different forms of processing.

According to Leite (1999), some resources are used to carry out this step. These resources are known as:

> [...] decoding, in which the meanings of occurring phenomena are amplified through the use of other forms of language; spontaneous comments during or after the meetings (feedback from group members and facilitators); and feedback from facilitators [that is, educators] (with the structuring of experiences). (LEITE, 1999, p. 24).

We find the applicability of the third principle during the configuration of the processing. At that point, self-observation, self-analysis and self-reflection are brought forth as tools for carrying out the processing, while at the same time being present in the evaluation, which is the last stage of structuring the experiential classes.

The evaluation is the last stage of the experiential class. This stage is meant to evaluate the entire process during the meeting. The students conduct the evaluation from the retrospective of the class and from leading questions. This evaluation process, as Leite (1999) explains, allows for:

> [...] the organization of the lived experience and its transformation into learning (what I learned from the experience), according to a cycle that, starting from the perception (what happened), facilitates reflection (how it happened and what was the result) and proposes formalization activities (how this is for me) and expression (what this did to me). (LEITE, 1999, p. 24).

The other principles postulated by the experiential learning method that are not explicitly linked to any of the stages of the experiential classes need to go through a configuration in order to be applied in educational practice.

The use of these seven principles in pedagogical practice, based on the conception of human being and grounded in the corporeality concept, allows for an integral educational approach to be done according to human complexity.

Final Considerations

Driven by the objective formulated in the introduction to this paper, a proposal for an experiential learning method was offered as a didactic-methodological option for

assisting teachers in implementing an educational practice that encompasses the different dimensions that make up the human condition and that are found in the classroom. This proposal was drafted taking the concept of corporeality as a philosophical foundation and presented as a conception of human beings adopted from the epistemology of complexity.

Through the discussion that has been pursued throughout this article, an understanding can be made that every educational practice is guided by a teaching method that is, in turn, driven by a didactic conception of a pedagogy related to the worldview, society and the human being in a philosophical system. Seen in these terms, the epistemology of complexity is adopted here as the foundation of a mindset that proposes the interlinking of sciences and philosophy, suggesting a worldview that recognizes the multiple aspects and the complex mesh of factors that make up reality: from its material substrate, a physical universe (the *physis*) as the place for creation and organization; from the universe of life (the *bios*), where the *autos*[10] that mark the ontological character of individual-subject for every living being emerge, reaching its greater complexity in the human being; and from the anthroposociological condition inherent to the human being, from which the noosphere, the world of ideas, an abstract and immaterial dimension of fundamental importance and capital for human development arises (MORIN, 1997, 1998, 1999). In this worldview, the conception of human beings integrates four dimensions into its corporeality (physical-motor, affective-relational, mental-cognitive and socio-historical-cultural) that inseparably maintain the elements and qualities of the physical, biological and anthroposociological world.

The search for a conception of human beings, which clearly expresses its philosophical and scientific basis, must be through the intention to develop didactic instruments for educational planning that assumes the same conception of being human. In this vein, the pedagogical principles of the experiential learning method should guide the teacher's pedagogical practice so that they are assisted in conducting and mediating an interdisciplinary and trans-disciplinary teaching process. In turn, this should serve the purpose of indicating a way for the learner, in that person's personal experience, to carry out the unity of knowledge in a personal synthesis through continual reflective production on the different types of knowledge. The entire process can only take place through the understanding that this course the student takes is the process of self-knowledge itself.

The notion of learning and the pedagogical principles of the experiential learning method, as elucidated here, allow an educational practice to be built that assumes the educational objectives (teaching the human condition, teaching how to live, teaching to structure and reconnect knowledge and reformulate a school of citizenship) suggested by Morin (2002b). The educational practice distinguished by these ideas can contribute effectively to an integral education. More succinctly, it allows the development of the different dimensions that form the human being as a subject-individual, enabling this

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10- The notion of *autos* represents an association and articulation effort that have multiple concepts related to life and to the *bios*, but has its roots in *physis* and its specific ramifications in the anthroposocial sphere. This effort is the preparation itself of an epistemology of complexity and was incorporated throughout the second part of Volume II of Edgar Morin's *The Method*. It is a multidimensional macro-concept that includes the organizational dimensions [auto-(geno-pheno-ego)-eco-re-organization computational/informational /communicational], praxical, logical (self-reference, self-egocentrism), ontological (the living individual/subject) and existential: life... (MORIN, 1999, p. 240). In a word, it underpins the idea of individual-subject for every living being.

development to take place from its socio-cultural condition, which constitutes it and which it also constitutes, in a recursive relationship. Furthermore, it makes it possible to become aware that it is part of and formed not only from a social environment. We should also primarily look at the chronological order of the formation processes of our planet, of a natural environment, *physis* and *bios* location, which is our common home to all human beings.

Applying this proposal from empirical research (JOÃO, 2003) has demonstrated significant contributions to establishing an educational practice that facilitates sensory-motor, psycho-affective, relational, cognitive development and the individual-subject's consciousness of their socio-historical-cultural condition, namely, the full development of the human being. The choice to not submit empirical data on the aforementioned research was due to the importance of exhibiting the epistemological, theoretical and methodological foundations of the proposal presented in this paper. This entails the need to draft future work that can present the suggested contributions and reflections coming out of the dialog with the empiric.

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