Distance education and paradigmatic changes: a new way of looking at them through pedagogical models

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Abstract: This article brings forth an overview of the paradigmatic crisis and the introduction of new pedagogical practices. It also discusses the relationship between paradigm and pedagogical model, presenting a theoretical discussion on the concepts of pedagogical model for Distance Education and its pedagogical architecture. To do so, the elements that are part of it such as organizational aspects, content, methodological and technological aspects are discussed. This theoretical discussion underlies the construction of a new pedagogical model for Distance Education taking into account the grounds over which today’s net society is based on: time and space.

Keywords: pedagogical model, distance education, paradigmatic change, pedagogical practices

1. Introduction

During the last decade Brazilian educational institutions have been marked by a significant process of change, in particular with the introduction of Distance Education in the educational process. It is said that this is the moment of transformation where the present paradigms of society are not enough to account for relations, needs and social challenges. The idea of a society that is centered on work is being replaced by an idea of a society which values education, within a new totality, called in many contexts Information Society, or Net Society. Such change means that an Industrial Society emphasizing a teaching culture gives way to a Net Society which emphasizes a learning culture, calling for the construction of a new educational model. It is necessary, therefore, to investigate which elements have been transformed and keep on changing and which have come anew into the scene.
The educational model in use in the Industrial Society privileges the technical teaching as its purpose is to train individuals for the performance of roles, according to their aptitudes. In this model, the pedagogical practice is far from the daily lives of students and generates little curiosity emphasizing the piling of knowledge, values and norms of society. As a result, students tend to lose interest because they cannot see the purpose of what is being taught (Mason, 2008).

In the Net Society, learning is characterized by an appropriation of knowledge in a concrete reality. That is, the starting point is the real situation experienced by the learner who is supported by the mediating and coordinating presence of a professor, committed to his/her students and to the construction of knowledge, who, in turn, aims to respond to the principles of significant learning (Castells, 1999). This process takes for granted that relevant information is offered to the learner so that he/she can relate it with concepts already present or in pre-existence in his/her cognitive structure and that end up influencing learning and the meaning attributed to new concepts built.

In this perspective, knowledge is conceived as a result of the subject’s actions upon reality, the student taking the position of a protagonist in the learning process which is built cooperatively, in a renewed and reflexive communicative relation with the other subjects. In this paradigm, the pedagogical practice considers the process and the actions more meaningful than the resulting products (Veen, 2009).

In this context Distance Education can help solve some of the problems of Brazilian education. Through the use of technological tools that enable distant learning, government, public and private institutions hope to tackle the giant educational deficit in the country and find the way of digital inclusion in the Information Society.

Thus, Distance Education (Moore, 2008), can be defined as an organized set of learning which is characterized, basically, by the physical separation between teacher and learners and the existence of some kind of mediating technology that allows for the interaction among them, in this case, the virtual learning environments. In spite of the fact that it can be organized based on different pedagogical models, it is important to highlight that Distance Education is education, that is, it is not just a technological system or a means of communication.

Therefore, this learning system offers instruments that can transform Brazilian education, supported by information and communication technologies (ICT). It is believed that, without the intensive use of technology, Brazilian institutions will not manage to reach all their range of formation/capacitation in education. However, this demands studies about theoretical and methodological proposals and call for widespread accounts of experiences as well as reflections upon them and their possibilities.

There is great expectation about distance education, especially at College level, as we can see in programs created by the Ministry of Education (MEC) SEED (Secretaria especial de educação a distância, in Portuguese) that is coordinating actions throughout the country to enable the insertion of technological renovations
in the teaching and learning processes as a strategy to democratize and increase the quality standard of Brazilian Education. These actions and programs aim to promote the development and incorporation of TICs and the development of distance education techniques applied to conventional didactics and pedagogy. Besides, the SEED encourages research and development of programs and projects addressed to the construction of new concepts and practices in Brazilian public institutions.

As it is, the present study aims to describe basic concepts for the definition of a Pedagogical Model (MP) addressed to distance education. It is understood that this Pedagogical Model will be based on the construction of new paradigms that respond to the emerging needs of a new teacher/student profile. This way, the consolidation of new models, with solid epistemological, pedagogical, organizational, technological and methodological pillar structures can be subsidized. We are, therefore, speaking of a possible paradigmatic change.

2. A paradigmatic crisis and new pedagogical practices

It is possible to say that there is, nowadays, an educational paradigmatic crisis concerning the advent of information and communication technology and, particularly, concerning virtual learning environments. These paradigmatic changes are due to a need to innovate considering that there are new subject profiles about to enter the work market, subjects who need to be prepared to think in different ways, to make use of new tools, less linear ones and more hypermediatic or hypertextual ones, focusing on a new way of learning, with greater emphasis not on product any longer but on process.

It is therefore necessary to face the crisis and come to terms with it allowing for a new look to replace conservative pedagogical practices in search of a transition. It is hard to lose old intellectual habits, overcome resistance, old classroom methods and the old paradigms but it is necessary to update, to be unbalanced, to re-adapt to the new, to the unknown, to what generates insecurity. The availability of new concepts, proposing new methodologies, theories, new standards to define reality, school, call for a new view of the world, a world of challenges, uncertainty, the search for something better.

To educate, in general terms, is to advance in successive leaps, it is to fit in, to fit the mold. To visualize the new, its structure and evolution have become a determining factor of progress and, when we look at education from a closer point of view, it is possible to say that pedagogical practices in use so far have been suffering from a secular paralysis, “formatted” in space and time. Pedagogical practices remain in an epistemological conservativeness and the traditional paradigms keep on ruling the perception of reality in schools.

It is evident, not only due to the introduction of Information and Communication Technologies, that a paradigmatic crisis is hitting Education. But also, it is through it that the need to undertake meaningful changes in educational
practices and, consequently, in the pedagogical model has become more obvious. Thus, a new pedagogical space is being generated and its characteristics are: the development of competences and abilities, respect to individual’s pace, the building of learning communities and networking (Behar, 2006). It is necessary to focus on capacitation, learning, open and distance education and knowledge management. Studies about the construction of knowledge, autonomy, authorship and interaction contribute to the construction of a heterarchic space, where cooperation, mutual respect, solidarity and activities centered on the learner and on the identification and solution of problems. It is in this process that the new emerging model is being engendered.

3. Relating paradigm to pedagogical model

To understand the concept of model it is necessary to go through the term paradigm, which is of common use and calls for a previous analysis of its meaning in the educational context.

Thomas Kuhn, in his book The Structure of Scientific Revolutions (1966) re-interpreted the concept of paradigm and defined it as a theoretical framework, built upon a set of methodological rules and axioms, established within a given scientific community for a period of time. Thus, it is possible to say that it is a system of reference upon which theories are tested, evaluated and if necessary, revised. As such, a paradigm is a set of theories or a dominant explication system in any particular scientific area for a period of time. But why for just a period of time? Kuhn states that there are shifts in scientific evolution and he refers to them as “paradigm changes.”

According to Kuhn’s definition, paradigm is the representation of a standard model that is followed. It is a philosophical matrix premise, in other words, it is a theory, it is the knowledge that engenders studies in a scientific field; a scientific realization with methods and values conceived as model, an initial reference that is the support of a model.

Therefore, when a change of paradigm is concerned, it concerns a new way of seeing, feeling, living within a new reference. Scientific research aims to promote changes in ways the world is understood. Breaks with the past take place, often enabling new ways of understanding the world and this is followed by theory reconstruction and by experiment re-interpretation. Other changes involve only little innovation and virtually leave intact the great structure of knowledge of areas.

Paradigm changes are felt in all areas of knowledge and many of them take place from inside out. In the case of Education, a paradigmatic change occurred from outside in due to the introduction of information and communication technologies, driving institutions to a new profile and to a reformulation of roles among “actors” involved. Among them, education managers, teachers, professors, students and monitors.
The term paradigmatic change has lately been addressed to information and communication technologies (ICT) and, particularly, to Distance Education which is one of the key factors for the shifts in the educational area. The world has new axes in the concepts of time and space. In this sense, a new paradigm is emerging. This new paradigm is built upon a new set of references through the confluence of a body of theories, ideas that explain and orient a new way of living, educating and learning.

Upon reporting such trends to the educational area, it is essential to elucidate the paradigms that support changes in pedagogical practice. It is important to highlight that educational paradigms constitute a reference system that explains a determined educational phenomenon. Thus, there is more and more need to build theoretical axes taking into account the “new” trends, contemplating aspects of epistemological, methodological and ontological nature.

Scientific activity tries to understand, explain and predict world phenomena (Kuhn, 1996). Science tries to simplify and generalize reality through laws, principles and models. The concept of model emerges, therefore, as an attempt to establish a relation to reality by analogy. The model is a figurative system that reproduces reality in a more abstract form, almost schematically and is used as reference (Behar, 2009).

So, models emerge in the core of paradigms. We can say that each model has its own expression within each paradigm and is differentiated by the objectives it aims to achieve, by the environment and by expected results which, naturally, lead into differentiating the strategies used (Gaspar, 2006). As our focus here is education, this model is denominated Pedagogical Model and it is rooted in learning theories.

In this study, the expression “Pedagogical Models” represents a teaching/learning relation, supported by learning theories whose bases are in different epistemological fields. All this points to a determined paradigm.

Any built model is named after a theory (piagetian, rogerian, vygostskian, skinnerian, etc.) or after a paradigm (interactionist, humanist, instructionist, etc.). However, this terminology may not correspond to the supporting epistemology, contradicting the theories mentioned (Behar, 2009). It is understood, therefore, that a pedagogical model can be based on one or more learning theories.

Picture 1 presents the process of construction of a pedagogical model. In it, we go from a dominant paradigm which, in general, influences the present learning theories as well as other scientific theories. From this point of view, subjects build their own personal model that is shared with peers.
Upon bringing the discussion to Distance Education, the situation becomes more complex as we try to establish a new meaning for the word model. In this perspective, the concept of model is strongly linked to information and communication technologies.

Numerous didactic pedagogical propositions for distance education have been made lately. As new technologies are developed, they are incorporated into the educational system and distance education issues are seen more from the technological point of view than from the pedagogical one. This brings on negative results causing school failure because the focus is on technological changes and not paradigmatic ones.

Therefore, the goal is to define premises for a Pedagogical Model for Distance Education that can respond to the paradigm changes as stated by Kuhn (1996). We are speaking of a new dominium in education, going from a ratio of one-to-many and/or many-to-many, with defined space-time concepts and where oral communication predominates to an interaction of one-to-many, one-to-one and also many-to-many. This new dominium is based on multimedia communication, and co-presence in space and time is dispensed. It is a new ground where the mere adaptation of pedagogical models derived from presential education cannot be made.

It is here that a paradigmatic rupture means the construction of new axes that will sustain the management of a new way of knowing, of living, of being, and of doing, distance wise.
4. Operationalizing the concept of Pedagogical Model for Distance Education

Within the framework presented, the concept of pedagogical model for Distance Education is understood as a system of theoretical premises that represent, explain and guide the way the curriculum is approached and that is consolidated in the pedagogical practices and in the interactions professor-student-object of study/knowledge.

The pedagogical model entails a multidimensional approach of all the participating variables and its elements, as we are going to discuss now. From the afore mentioned concept, we highlight the fact that the elements of a pedagogical model for distance education have a structure supported by a determined paradigm and matched to one or more educational theories that are used as a learning orienting matrix. This structure is shown in Picture 2 where, at its core, the element denominated Pedagogical Architecture (PA) can be seen.

The PA consists of (1) grounds for the planning/pedagogical proposition (organizational aspects): goals of distant teaching/learning process, space and time organization and expectations in relation to the performance of participants, also called class social organization; (2) content – instructional material and/or computer resources used – learning objects, software and other learning tools; (3) activities, ways of interaction/communication, evaluation procedures and the organization of all these elements in a didactic sequence for learning (methodological aspects); (4) definition of virtual learning environment and its functionalities, communication tools such as video and/or teleconference, among others (technological aspects).

![Picture 2. Elements of a pedagogical model for Distance Education](image)
Organizational aspects are concerned with: definition of learning goals in terms of an “intention list”; class social organization where groupings and separations are established, roles are defined, rights and duties of each “actor” (be it teacher, student or tutor); time and space systematization considering flexibility issues that virtual learning make possible. According to Zabala (1998) space and time variables are, in general, not explicit in pedagogical models but they have fundamental importance in any space of pedagogical intervention. In presential education these two variables “seem” unchangeable in school organization because time is systematized in fixed periods and space in classrooms. However, in Distance Education they have dimensions yet to be explored by teachers who have strong concepts of presential education in their educational practice.

In relation to content, it can be any kind of material and/or element used in order to build knowledge. According to Zabala (1998), the contents one intends to work with can be classified following a conceptual, factual, attitudinal and procedural approach. This group of elements must be carefully planned so that knowledge, capacities, skills and competencies are built and developed.

In sum, the content is “what” is going to be covered. Thus, it can be very simple instructional material, an educational software, Web pages or learning objects. Contents can integrate several media such as sound, image, video, text and/or hypertext, contemplating different learning styles (Palloff & Pratt, 2004). Besides, the methodology of work (“how”) can be inserted into this type of material. In this case, the methodological aspects are integrated to this element of architecture.

Methodological aspects concern not only a selection of techniques, procedures and computer resources to be used in class but also the relation and structuring that this combination of elements will have. This will depend on the objectives to be achieved and on the emphasis given to content that is previously established. Methodological aspects have a direct relation with the objectives of the course as well as with evaluation issues. The act of evaluating concerns the collection, the analysis and the data synthesis that is configured as an evaluation object. Therefore, it is important to have in mind: what is being evaluated? How? Why? By whom? What do we want to evaluate? Will evaluation be continuous? Formative? Additive? Which tools from the virtual environment can help evaluation? Will evaluation be presential, semi or totally distant? These instruments should supply data to show whether objectives were achieved (or not) according to their description in the pedagogical planning.

Within the technological aspects, the Virtual Learning Environment (AVA) and its functionalities and/or resources of communication and interaction that are to be used must be defined and the choice should be based on those that best adapt to the course/program in question.

Nowadays, there are numerous Virtual Learning Environments that support teaching-learning processes based on the Web, either originating from the academic or commercial areas. Each of them has, implicitly or explicitly, conceptions about how the process occurs and aims to target specific objectives.
Therefore, what we need to consider is the model of the virtual learning environment: centered on the user or on the course and, once this is clear, select which best fits the characteristics of the course.

In what way, then, do pedagogical architectural applications differ from one another? It is necessary to take into account the social, emotional and personal aspects of the “actors” involved in distance education, which means that another important aspect to be highlighted and reflected upon as a “differential” in the process of teaching/learning (there are variations from teacher to teacher), is the strategies of application of the pedagogical architecture. These constitute the dynamics of the pedagogical model.

The strategy of application of Pedagogical Architectures is defined as a didactic act that addresses the articulation and adjustment of any architecture to a situation of learning of a certain group (group, course, class). Thus, it is possible to say that the application strategy refers to the way the teacher will put his personal model in practice (as shown in picture 1).

It is understood, therefore, that the strategies for the application of pedagogical architecture are responsible for their dynamism, in other words, the dynamism of the constitutive process of the pedagogical model. The pedagogical architecture may, therefore, through its strategies of action, contemplate the social, emotional and personal aspects that are part of the teaching-learning process in virtual environments.

5. Final Considerations

In the present study, a framework for the concept of pedagogical model was exposed, conceived as shared representations of a relationship system established in the pedagogical activity. Its constituting elements were analyzed highlighting the construction of a pedagogical architecture and of the variables that constitute it, focusing on Distance Education.

The objective was to present the elements of a “possible” pedagogical model, supported by organizational, epistemological, technological and methodological parameters, from a different viewpoint.

We aim to contribute to the consolidation of new pedagogical practices to be implemented through Distance Education. Thus, these paradigmatic changes may serve to make the new actors more and more in charge of their own histories, converging, diverging and/or simply crossing paths in the process.

We can say that the network of knowledge in Distance Education is being constituted, engendering several knots, but also finding several directions that open up and configure new ways. Among them, the pedagogical models for Distance Education which still demand research, investigation and growth.
References


