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Time and Learning Space in the Twenty-First Century

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Abstract

This paper investigates the transformations that contemporary education is suffering under the new requirements arisen from the information era regarding the representation of time and the production of information and knowledge. Through a bibliographical study, this paper moves the discussion between the dematerialization of space, the acceleration of time and the strangeness of multicultural knowledge where universal concepts and instant question in a relentless need to innovate and reform the foundations of science, education, arts and culture are noticed. Based on the reflections of Pierre Levy, Michel Foucault, David Harvey, Paul Virilio and Ágnes Heller it mentions uncertainties that denounce the apparent inefficiency of institutions that seek immediate solutions in Education in order to reduce the inability to keep up with the dynamic contemporary requirements.

Keywords

Education, Representations of Time and Space, 21st Century

1. Introduction

What would be the kind of time spilled out by technology?[1] Pierre Levy

The questioning of Levy (1993) on the notion of time produced by the information era stimulated two basic questions to be pursued. The first refers to exactly the kind of time we are producing in the 21st century and, the second is the way that this conception of time is interfering with the educational process. From these two questions, this article aims to investigate the transformations

[1](Levy, 1993: p. 114).

that contemporary education is suffering under the new requirements arisen from the information era regarding the representation of time and the production of information and knowledge.

As we reflect on the question of Levy (1993), we can infer several possibilities of interpretations that are directly connected to the relationship between time and history. The first and broadened one refers to the fact that time has taken different concepts throughout the historical process. In other words, it has been subject to multiple interpretations and constructions according to the time they were experienced. This shows that the representations of time produced in different periods of history have taken on different forms and meanings from the contemporary time in which we live.

Beyond this historical plurality of different notions of time produced at their respective times, we can also infer that the information era is producing or secreting a new shape or time design. It means that not only the historical period produces its kind of time, but also when it produces its own kind of type, it produces conflicts with other temporal concepts. The fact that a given time produces a sense of time, presupposes the coexistence and the tension between one or more temporality inhabiting a certain time from several important areas.

This means that when building or even in order to become hegemonic, a certain conception of time is not excluded or exterminates the previous conceptions that are going to coexist within shaded or drowned out conceptions by the new hegemonic representation position. This coexistence of multiple periods allows not only understanding the meanings of time in a certain time, but the conflictual relationship between the dynamics of maintenance, changes and discontinuities of the time representations.

Within these possibilities, two approaches are possible in the study about notions of time: the first refers to the study of consolidation and maintenance of the concept of hegemonic time of a historical period and its ramifications in the constitution of truth schemes. The second possibility is based on the research of the dynamics related to the transformation of those notions of time, because they reveal the conflicts and dialogues between multiple existing temporalities and their possible discontinuities, i.e., the decisive moment regimes process contradictions and ruptures.

This paper investigates the transformations that contemporary education is suffering under the new requirements arisen from the information era regarding the representation of time and the production of information and knowledge. We understand the representations of time as the result of a historical building process and its relationship with society in its various historical periods.

Through a bibliographical study, this paper moves the discussion between the dematerialization of space, the acceleration of time and the strangeness of multicultural knowledge where universal concepts and instant question in a relentless need to innovate and reform the foundations of science, education, arts and culture are noticed. Based on the reflections of Pierre Levy, Michel Foucault, David Harvey, Paul Virilio and Ágnes Heller it investigates the transformations

that push the new to inquire the modern, to dissolve the past and future concepts to plunge into the everyday representations of this increasingly uncertain and inaccurate present. It mentions uncertainties that denounce the apparent inefficiency of institutions that seek immediate solutions in Education in order to reduce the inability to keep up with the dynamic contemporary requirements.

Having that in mind the paper is divided into four headings. The first one, Uncertainties and Discontinuities: building up knowledge over historical period, brings the discussion and analysis of time and learning spaces as they have a special room in the 21st century. It takes into consideration the fact that uncertainties and discontinuities denounce the apparent inefficiency of institutions that seek immediate solutions in Education in order to reduce the inability to keep up with the dynamic contemporary requirements, over historical periods.

Space-time in History or History of Time-Space is also presented taking into consideration appearances, influences and meanings that are related to language and technique, having as its starting point an intriguing question as it asks how and why different intellectual technologies generate different styles of thoughts.

Post Modernism and Time Acceleration are seeing in their relation with space and technology. Time, space, past, future are considered as historical fragments that are replaced in the twentieth century by speed, virtuality, intensity and technology bringing with them the notion of the new, but not newly streamlined by the experience, progress and future, and yet constituted by uncertainty.

2. Uncertainties and Discontinuities: Building up Knowledge over Historical Periods

Seeking discontinuity means working with the contradictions of the historical period, allowing the study of criticisms and alternatives to this system of truths, which its own hegemonic notions of time were forged by consolidating real places and produced powers as forms of constituted knowledge. However, can you see the discontinuity? To Foucault (1995), the discontinuous means to question ourselves about:

> The fact that in few years, sometimes, a culture ceases to think as it had done so far and sets thinking something else and otherwise - gives access without a doubt, an erosion that comes out of this space to think, on the other hand, but where, however, he did not stop to think from the beginning. Ultimately, the problem formulated is the relationship between thought and culture: how it is that a thought has a place within the world that here and there finds a source, and does not cease, here and there, always start again? (Foucault, 1995: p. 65)

By studying the discontinuity, we look for the possibility to realize this moment, its contradictions and repetitions. Throughout the discontinuity of the concept of time in a certain time, we seek the emergence of a new concept, in other words, new announced and discussed arrangements, spread out and repeated, which has in its relation the apparent break with the hegemonic power

and existing knowledge, as well as with the creation of a new way of life.

The choice to work discontinuity allows you to view the movement of discursive agents, of creating movements and the development of new ways to question and to manage regimes of truth where one does not prioritizes continuity anymore, as History commonly does, but its dispersions.

One can, therefore, understand how changes in the design of time taking into consideration the fact that the everyday structures are processed and, within that speech dynamics, there is the creation of what Foucault (2007) called discursive formation. This is understood as the organization of statements, which are established within a network of power taking into consideration the knowledge about what can and should be said, working, as Foucault (2007) states, as a matrix of meaning.

When Foucault mentions speech, he refers to the statement, understanding statement by something that is and can be seen in the transversal lines of the speech. Besides, it is "A function that crosses a domain of structures and possible units, which makes these appear as concrete contents in time and space" (Foucault, 2007: p. 98).

Through the discursive formations the generation of an intricate system of statements can be perceived and, although they may not be designed differently, they congregate and disseminate a list of statements with the fields of knowledge. So, you realize that things said are not only tied between the different areas of knowledge, as represented in a system of power the dynamics of time and space in which they are related to.

Therefore, while a statement within its crosscutting features is not visible and noticeable, it is not completely hidden. To Foucault (2007), the need to multiply relations is done through the election of certain statements and its intersection with other discursive formations, thus, it is not possible to realize the cause and effect of a statement, but to establish the ties that certain statements congregate and bring up its integration with time and space. It is to ask why certain speeches are being said in this place, at this time and the way they are.

From this matter on, the discourse analysis gets very different from the structure that commonly occurs, as it abandons the search for insight to the meaning of the speech ongoing form, in other words, of cause and effect or between the lines, but within a discursive formation. There is no place for the obscure sense of what has been said, but we question why certain sayings become prevalent at certain times, smothering other sayings through the network of relations.

Thus, the search for the various hegemonic forms the conceptions of time have taken in their historical periods allows investigate not only what they produced, but mostly what they have hidden or suffocated by the regime of truths that were produced. That is, beyond revealing a multitude of ongoing and possible long relationships, it brings up the possibility to realize that the prevailing time relationship, as opposed to characterize and form the historical period, is only one agent among many constituents of that same period. This prevalence was subject to the form, intensity and, particularly, the types of agents that are

related to it.

By simply checking the multiple discourses on the contemporary period, we can conclude that we experience with the technology, the replacement of a hegemonic form of time relationship for another one. That is why there is the evidence of the constitution of a new historical period.

Considering time as a secret agent of technology, we can find today in technology and in information a predominant form of relationship and that is from those initial perceptions that can be established some questions to pursue on this apparent new sense of time produced within the advent of the information era. So, we ask: What is the sense of time that begins to take on the dominance from the Informational Era? What are their conditions and characteristics and how they are manifested? What are the conditions and instruments that take concepts and notions of time and space to transform and take on new forms and intensities?

It is said that "The speed dilates time at the very moment it constricts the space." (Virilio, 1993a: p. 61). Seeking in history the prevailing notions of time and the agents that were related to this perception, one can establish two types of relationships that are didactically divided, but in, reality, they have merged as described below.

First: time, historically, has always been tied to the notion of space. "La historicidad es nosotros; nosotros somos tiempo y espacio."[2] (Heller, 1982: p. 80). I fact, History has always carried these two concepts together, and have always established a balanced relationship with each other. Second: When inserting the idea of speed, which has always walked with technological advances, there has been given ignition to the distancing process of time and space notions.

Through these two approaches, one can realize that time has always been linked to space and, as the first accelerated, the second lost its frightening dimensions. However, what are the representations of time and space in the course of history? Within these relations, the transformations that the notion of time and space (apparent and actual) suffered, have become of deep interest to this study, especially with regard to the issue of replacing a relationship model of a space-time to another. Actually, the concern lies in trying to understand how a predominance *ratio* reaches saturation and sees itself suffocated by the resistance, creating the need for new training.

3. Space-Time in History or History of Time-Space

Levy (1993) sees three main aspects of time in history, which are in two founding agents of their constitutions: appearances, influences and meanings that are related to language and technique. From the disturbing question: "How and why different intellectual technologies generate different styles of thoughts?" (Levy, 1993: p. 77), the author builds the three points to ponder as for the spirit of time: Primary Orality, Writing and the Information-media.

[2]Historicity is part of us; we are time and space.

The period of Primary Orality is referred to the role of the word before writing. To Levy (1993), the word without being written has as its main function the memory management. It is a communication way that allows, through the notion of time production, safeguard and transmit experiences and techniques.

Nevertheless, how did this transmission within the time of orality happened? Through the Circle image: Through the "nonstop movement of having a new beginning, of reiteration of rites and myths" (Levy, 1993: p. 83), which find in orality, its condition of near materialization. Repeating and transmitting myths and rites means materialize them in time and through it, it means a continuous start/retell. The narratives that follow the flow of the seasonal circles hide in Orality the slow and imperceptible transformation of technology and survival. For Levy (1993), Orality, although it has fixed the eternal narrative beginning, it does not find a fixed point because of the lack of writing, which allows communication through a creative change according to circumstances.

We, therefore, through the circle or the eternal return, the possibility to transmit and transform the criteria of necessity, not even establishing the parameters of such transformations. The Orality is the time of memory, organic memory that has in the act of retelling the only alternative to transmit something that has been and is expected it will be again. Thus, "the time of primary Orality is also what is about to be, but without marks and traces." (Levy, 1993: p. 84).

The Neolithic Revolution brought with it the need to establish a significant transformation in the sense of time. From the invention of agriculture, time comes to mean survival. If in the Paleolithic seasonality means the cycle for hunting and harvest, agriculture is the technical accuracy and precise control of time.

With agriculture, there is a need for "a well thought organization of limited time" (Levy, 1993: p. 88), where the necessary precision of agricultural steps makes the difference between survival and death in the community. Besides, if in hunting and harvest the survival depends much on the choice of space, in agriculture, space and time require precision, control and information, consequently, it depends on waiting for planting and for the harvest.

From agriculture arises writing because of the requirement to monitor, register and calculate the output as well as stipulate and implement wealth, power and knowledge. Through writing, it is possible to register or create a fixed reference of evolution. Through writing, knowledge is frozen up through rites and myths and it quickly becomes an important ally of power and sovereignty, because from writing one is able to control and configure the past, creating a safe concept and precise idea of future. Therefore, the figure of the past-future line circularity of Orality is broken up.

Through writing it is possible to form large domains because it serves to establish a definite relationship between time and space, as "through writing, state power commands many as signs as men, fixing them in function, stablishing them in a territory, organizing them on a unified surface." (Levy, 1993: p. 88).

Writing innovates the narrative as it allows, unlike the orality, separate the speech from the circumstances in which it was created. This establishes the possibility the practice of interpretation. While orality adapted to the circumstances, "the writing civilization adds new interpretations to texts, pushing before itself a mass of writing increasingly imposing." (Levy, 1993: p. 90).

However, at the same time in which we recognize the effects produced by writing to produce linearity through the construction of future-past notions, one can see that through the computer, it is possible to process a deep break in that linearity. In that situation, through the computer, it is replaced by the notion of time predominantly linked to real-time and to the very instant.

Levy points out that the current databases have "nearly two-thirds of the data currently stored in the world representing economic, commercial or financial information" (Levy, 1993: p. 114), establishing a strategic access point of domination and instantaneity of real time, since they are loaded and replaced continuously. This feature puts the computer as a set of permanent knowledge use where the access and immediacy guarantees the renewal.

The linear relationship of history brought about by writing shall be characterized by score, by instantaneity, "in this sense, the most databases are first mirror than memories, mirrors as faithful as possible to the current state of the art or a market." (Levy, 1993: p. 115).

Taking up the words of Virilio (1993a: p. 61), "the speed dilates time and compresses the space", it can be seen that from the immediacy of information emerges the real time with speed, fast and renewable time, at the same time it compresses the space, becoming closer and more attainable.

Harvey (2014) draws an interesting parallel between the globe's size in relation to the increased speed of technology. A thorough investigation of Harvey (2014) on the subject allows us to establish the aspects discussed from now on. Through technological advances in terms of knowledge and speed, Harvey establishes five periods of transformation and change in the relationship between time and space from the history of capitalism: Feudalism, the Renaissance, the Enlightenment, Modernism and Postmodernism.

Through this study, Harvey (2014), refereeing to the evolutionary model of the notions of time, says that not always the transformation from one period to another brings, as it may seem initially, ruptures or discontinuities in the way of conceiving time and space. Thus, even if the two periods may have traditionally opposite characteristics in respect of economic, political and social organization, these carry similar notions of time and space, being differentiated only by the intensity of relations and their uses.

Periods apparently opposed to modernity and postmodernity carry a lot of the same principles and relations of time and space between them, even if discourse and theory can thoroughly look opposite, the notions of time are produced by specific peculiarities but not necessarily new.

By studying Feudalism, whose characteristic is the present time, Harvey (2014) realizes that the feudal structures, within its political and economic as-

pects, have always been characterized by a certain autonomy and self-subsistence. The political units of the fiefdoms guaranteed their survival, being the protection, maintenance and internal order concerns of each fiefdom. Earth or space, or rather, the land ownership became, within this relative autonomy, the source of wealth and power. The outdoor space of the fiefdom revealed itself as a space without much interest, because it only reflected the structures through an intricate ownership succession system that used to give a relative sense of eternity: If all the wealth and survival came from the earth, this would reflect in a range of obligations, economic and political rights. The spatial dynamics of Feudalism leads us to think of the eternal feature of time since:

> The qualities considered finite of a place (an intricate territory of interdependence, engagement, monitoring and control) were similar to everyday life routines that were time-honored and set at the infinity and the lack of comprehension of a permanent time (Harvey, 2014: p. 219).

Thus, within the European feudalism conditions, we have the finding that the prevailing notion of the relation space-time was represented by the assertion: Limited space, perpetual time.

Yet, the long and great transformation aroused from the Renaissance brought the mandatory re-articulation of time and space notions. Technological advances coming from overseas expansions, the discovery or the proof of the globe circularity brought to the notion of time and space a new character: the finite world.

The world was finite, achievable and exploitable. The distances and the connection time between worlds and cultures have become key strategic positions. The constant clash between the interests of powerful mercantilist nations with the possibility of other cultural structures allowed developing on a European scale the notion of difference. From the permanent time connected to the feudal limited space, we move to the notion of time related to speed and technique, being the space for a sense of achievement and transformation.

The trade now represents autonomy and security, speed and possession of new spatial relations and characterizes new power relations. The policy was molded according to this reality, interest positions are set up to face militarily or legally the exclusive contact with the new world. The representation of a finite globe, not only became possible as it became the main instrument of manipulation and power. Knowing and understanding the finitude of space, through a conception of the speed of time, would imply taking the differences of a knowledge/power to the strategies of politics and economics.

As for the Enlightenment, Harvey (2014) argues that it also wanted to dominate the world, having somewhat the same conceptions of the Renaissance. The point was that the discovery and demarcation of the new world or a finite globe now needed a more systematic and mathematical organization. Maps, land, production and trade found in the ideal Enlightenment bourgeois the growing need for organization. This need was constituted from the knowledge and the

possibility of the multiple: Multiplicity of peoples and cultures that were not prepared for the game of the capitalist domination at the level of production, trade and exploitation, recognizing the other through space and organizing them over time.

In Harvey's (2014) opinion, the Enlightenment idealizers have done nothing more than create an instrumental, based on science, to organize and manage the Renaissance time-space design. However, the big problem that emerged in the Enlightenment and that somehow accompanies us today is the question of how to recognize the other within a global organization model. Actually, it recognized the difference at the same time it tried to create a uniform and globalized model.

> The problem of the Enlightenment was not the lack of a concept of the "other", but in fact to understand the "other" as necessarily having a "specific place" in a spatial order designed, from the ethnocentric point of view, as having homogeneous and absolute qualities (Harvey, 2014: p. 228).

The concept of time-space brought by modernism, in part, did not change much of the Enlightenment conception. The vision of the Globe organization was a fundamental piece to the bourgeois ideal. The relationship of space and time passed through the control, being a strong tendency to the resistance to the constant threats that persisted in terms of the permanent time of traditional societies.

The large variation concerning the concept of time-space of modernism opposing to the Enlightenment was based on the conditions that surrounded the Great Production English crisis (1846-48). This crisis, which generated a strong need for economic restructuring, brought with it some significant first workers' demonstrations in Europe.

The crisis generated internally by poor working conditions and a total lack of administration took the notion of time-space of modernism to consider and to live with a space that, besides being multiple, related to changes, it is arithmetically distributed and, therefore, safe, as well as to a space characterized by the insecurity of change.

The idea of the total space, revealed by the crisis and by the approach and also the multiple and the differences put modernism in a very ambivalent position: The multiplicity of spaces, having he space-time as a unit, the space-time as difference. Harvey said something about this situation:

> Modernism, seen as a whole, has explored a variety of ways the dialectics of place versus space, present versus the past. Celebrating the universality and the collapse of spatial barriers, it also explored new meanings of space and place in ways that tacitly reinforced local identity (Harvey, 2014: p. 248).

The relative approach of space created a sense of unity, because it put together cultures separated by distance. However, the proximity with each other has revealed the need of difference. Local, cultural, religious and economic issues come to play a relative autonomy before the unit. The wish for the tradition maintain

erected the space-time constituted features.

The place *versus* the unit reveals along the Modernism as the initial contribution of a sense of time and space where knowing and having access would mean, not necessarily, losing the founding bonds of territoriality and historicity. In this sense, it means to belong to a gear made up by the unit without establishing uniformity: "Modernism can never properly settle their accounts with the parochialism and nationalism." (Harvey, 2014: p. 250)

The place *versus* the unit is seen by Jean Baudrillard (1997) throughout the distance of two relations: globalization and universality. In this respect, Baudrillard (1997) makes an interesting distinction between these concepts:

Globalization and universality do not go hand in hand; there would be, at first, an autonomy of one over the other. Globalization is related to technocrats, trade, tourism, information. Universality is concerned with values, human rights, freedoms, culture, and democracy. Globalization seems irreversible; the Universal would be endangered. At least as constituted as a value system on the scale of Western modernity, with no equivalent in any other culture (Baudrillard, 1997: p. 127).

However, what was the historical project built within Modernism? Through the knowledge of a finite globe and the need to organize it, this fact led Modernism to draw the notion that space must serve man and technology is the effective tool for that. Nevertheless, the use of space, as it has demonstrated in the last decades of this century, demanded an organization and reorganization of the way to address and explore space.

The ecological issue and with it the notion of difference, brought interesting questions to show the contradictions of Modernism relationship with space. The rampant use of natural conditions rather than a survival of space in relation to human needs demonstrated the precariousness of destruction. Just as the "globe" proved to be finite, natural resources have proved to be much more sensitive because only fifty years of uncontrolled exploitation were enough to organize the intricate network of relationships that the ecosystem is composed.

Forests, seas, soil and fauna live in nature within a harmonious relationship where the human build-destroy action affect that condition. Finite resources, reevaluation of rational structures of the globe organization are a mirror of the Enlightenment project taken to the extreme of globalization by Modernism.

However, organizing/reorganizing the occupation and exploitation of space means promoting a clash with the unity of the Modernist difference. The uncomfortable position to discuss a rational solution to problems that were issues facing the establishment of a national sovereignty and cultural hegemony is established.

An example of this enclave is related to the matter of the Equatorial Amazon Forest. Its contribution to globe harmony has been thoroughly studied, widespread and organized. From those studies, it has been noticed its influence on the global climate system, becoming one of the main interference in the heating

of the gulf stream, which in turn is responsible for climate amelioration of northern Europe, which makes possible people live in that region.

While the Forest is part of those climatic conditions, it reveals itself by a large deposit of mineral and vegetable resources: strategic point for the maintenance of order and energy of the globe's economic policy, especially as a source of wealth and power for countries that are in regions covered by forest.

The ecological knowledge generated in Modernism linked the need for organization of space and led to the meeting of two contradictory and founding perceptions of Modernism: place/universality. If we take these issues to the Amazon Forest, we realize that the question/contradiction is revealed in the concept of sovereignty of the states that are located in an area covered by forests.

Being the Ecological Knowledge a global issue, the forest must be preserved at any cost, being characterized as a universal question. According to the Amazon Basin countries, the sovereignty and local culture should be respected, leaving to them to prescribe the best criterion of maintenance and exploitation of the forest: City *versus* Universality and space - Ecological Knowledge *versus* space - Resource - Exploration.

Two relations that trail the same possibilities, since, as was confirmed during the twentieth century, it is not enough to be present in the finite globe, but one has to establish its instruments of domination and organization (Sovereignty *versus* Ecological Knowledge). Therefore, the dichotomy of City *versus* Universality can achieve global distances.

Boaventura Santos (1997) states that the problems generated by modernism proved, especially after the Cold War, a condition of disparities between parallels. The difference and the clash of interests between the countries of the North before the precariousness of South parallel countries, bring to light the difficulties of establishing in the political level-sovereignty and economic - technological, a Universalist harmony in the world. The differences are felt within a cyclical and founding situation since the technological advances of the northern countries are within technical and scientific possibilities that are denied in the southern societies.

As for this disparity, Santos (1997) calls space relationship - World time, i.e., the space-time relationships of social relations between the Nation-State within the world economy. On one hand, the fall of the Berlin Wall began the end of bureaucratized socialist conceptions of Eastern Europe, on the other, the current capitalist model was not efficient to establish and respond to the social needs generated within the model itself. The space-time of social relations, according to Boaventura, has foundational problems of the ongoing North-South dichotomy. These are: demographic explosion; Globalization of the economy; Ambient degradation.

Santos (1997) states that from those differences between the North-South relations reveal themselves as striking and contradictory. If in the northeast countries the question of demography, globalization and environmental degradation is universal, the social space-time relations are chronic in the southern ones.

Consequently, we face chronic social problems in the South, while the requirement of an economic model is unquestionably globalizing.

If we consider the issue of population growth, the contradiction is highlighted here. In the Southern Hemisphere, it is a matter of adaptation and monitoring of the productive rhythm and social advances.

If the conditions of the great crisis of the economic model faced solutions that came from European countries over the past three centuries in the North, the countries of the South face the impossibility of such emerging responses, as there are emigration barriers to the North, besides a geographical separation between the North technological revolutions with the demographic South.

From the analysis made by Boaventura on the South and the North, we realize the distance of two worlds with completely different time-space relationships, requiring solving problems through a frame of technological expertise and economic globalization that is almost irreversible.

While the Universalist globalizing economy model generates domain and power relations, inequalities generated by interests lead the social and political issues to a fragile condition and tension. It generates contrary reactions to globalizing precepts of technologically dominant countries, since local enclaves require maintaining productive superiority, alternative control, ranging from total enclosure of borders and the rebirth of racist movements and Nazis, as the issue of Syrian immigrants, while contradictorily that propagates the opening of customs barriers in producing countries of raw materials.

4. Post Modernism: Time Acceleration

To Harvey (2014), the founding issue in the history of capitalism that drives the passage from the modernism of the time-space concepts to Postmodernism are the conditions that led to the replacement of Fordism to flexible accumulation of capital. These transformations have taken place, according to the author, by the need to deploy new forms of organization of space and new production of technologies. These changes were constituted by characteristics generated within their own internal needs of the economic model of Fordism.

Subcontracting, office transfer, just-in-time deliveries, reproduction in turnover production times was reflexes to suit the production of new consumer requirements. Consumerism dictated by the mobilization of fashion in mass markets, especially when it comes to the passage from goods consumer to services consumer. Thus, we have a time revealed in speed. But what are the characteristics of that space-time relationship and speed in Post-Modernity? Speed, according to Virilio is the:

> Creation and fall time, the day directs and organizes the elasticity of time; not only of the day, the week, the month, the year, but of the relativity that never failed to keep up with time intelligence, mystics of the time, the political, and that History, Philosophy and Physics retained the spot, to the recent theories of restrict relativity, and then the general one that will end up showing the crisis of the temporal and spatial absolutism, in the explosion

of a multitude of - local time - induced by the constant speed of light; light speed which now shines a new way the scope and duration, because proves that the speed dilates time at the very moment in which constricts space (Virilio, 1993a: p. 60).

The speed of time approaches and reveals a new reality, the reality of what appears to be. This condition directly affects the notion of space, because with the advent of instant image the conquest of space becomes a merely virtual concern. Distances, reliefs, deserts, for instance, instead of requiring displacement and military domination strategies, begin to conceive a reality that does not have, that does not stop, where the action of possessing is revealed in the communication strategy and in the use of the increasingly faster technology. Virilio (1996) argues about this dematerialization of the notion of space as follows:

The old duel between cities, the war between nations, the permanent conflict between maritime empires and the continental power nations, all this disappears suddenly giving way to an unprecedented opposition: it contacts all the locations of all matters. The planetary mass is being just a 'critical mass', a precipitate result from the extreme reduction of the ratio of time, fearful friction of places and elements that were yesterday still distinct and separated by anachronistic buffer of distances (Virilio, 1996: p. 125).

Technology that takes the ratio of the speed as a means of incorporation, since, as noted by Antoine Picon (1996), the social impact of this technique lies in the actual design problems where the requirement of construction and development of increasingly heterogeneous knowledge end by causing in our century the establishment of a new technical thinking.

The new technical thought dissociates the image of knowledge production that is left restricted to intellectuals. The technique, in this complex design, ends up playing a predominant role in the very process of knowledge construction, a view espoused by Abraham Moles when he says: "The technique, this way, creates new situations, creating new problems that we are going to ask the philosophers to solve" (Moles, 1996: p. 67).

Time, space, past, future, historical fragments that the twentieth century replaced by speed, virtual, intensity and technology are categories that carry with them the notion of the new, but not a new streamlined by the experience, progress and future, but constituted by uncertainty. Uncertainty of being, reality and time. Virilio (1993b) questions

How truly live if here is no more and everything is now? How to survive tomorrow to the instant merger/confusion of a reality that has become ubiquitous decomposing itself into two equally real time: the time of our presence here and now and the one that is a distant telepresence, beyond the horizon of sensible appearances? How to rationally manage not only deployment of current and virtual realities, but also the apparent horizon that marks the perception limit of my everyday activity and the transparent horizon of a screen that suddenly opens a kind of temporal window to

elsewhere and often very far? (Virilio, 1993b: p. 103)

Through new multitemporal, multicultural and multireferential ordering, contemporary education produces, incorporates and discards proposals, theories and practices that are increasingly diverse and instantaneous, provoking a succession of models that try tirelessly to capture the multiple transformations of contemporary subjects.

The twenty-first century is characterized by a multiple process of information through technological leaps, of the dematerialization of space and acceleration of time that brings the strangeness of a multicultural knowledge. The universal and instantaneous threaten sciences, education and arts where traditions and certainties break up in the constant need for innovation and renewal.

Changes requiring the new to disdain the modern and dilute the notions of past and future stained of representations of this increasingly uncertain and inaccurate present. Uncertainties that denounce the increasingly so called inefficiency of institutions, at the same time requiring from Education instant solutions to the inability to produce or even track dynamics that flow the demands of the contemporary time. This is reality what has led the school to experience a steady and rapid redesign process to rebuild and incorporate new educational methods and teaching techniques to attract and captivate contemporary students. New formulas that seek, in speed, to overlap theories and concepts, in the accumulation of information and the use of it and of communication technologies, a path that brings the future and brings education to the pace dictated by the speed of a time that learned to become instantaneous.

This uncontrolled race between the school and the new subjects produces the denunciation that the homogenizing models produced by modernity for education are no longer connected with the needs, experiences and differences dictated by the present time. These differences and contradictions allow us to infer that the dynamics of time established throughout the century a profound sense of non-synchrony, that we are living different time spaces where the degree of acceleration varies according to the historical conditions of technological practices and Information systems development of modernism.

The non-synchronization of time, but the existence of several concomitant times compromises the sensation imposed by modernism of a world universalized by technique and mass information, providing the idea that the new views suggested by postmodernity become increasingly necessary and effective to establish limits and resistance to modernist contradictions, dictating new directions and challenges to the educational process.

5. Conclusion

The question pursued in this study lies in the historical dynamics through which the subject, within its time/space relation, receives, processes and sends information. We have investigated the transformations that these relations suffered from the increase of speed of production, transmission and access of information, in the contemporary world.

Through a process of acceleration of time and the understanding of space, subjects began to establish a rampant race for the everyday new technology as synonymous of modernity, incorporating this new notion in their daily practices.

Contrary to the expectation that the mass media generated the global culture through the shortening of the space, it can be noticed that the increase of the speed of technological and informational innovations created an acceleration in the relations of time, but not in a linear and homogeneous way but, yes, multiple and dispersed.

Both deterritorialization as the temporal multiplicity imposed new relations between the subject and society, revealing an almost infinite range of possibilities, once he became acquainted with multiple and, therefore, questioning the totality. This recognition of his contemporary condition pushed the subject to seek in education instruments that distanced him from total and global solutions, like the great majority of the educational models of the twentieth century that did not consider the specificities and needs of the subjects to the detriment of an abstract and utopian collectivity.

Although this study does not intend to end the discussion about the relation of time, space, subjects and education, it intended to contribute to the reflection on the need that education has, in the present, not only to follow and to incorporate the technological and informational revolution but, mainly, to foment mechanisms and strategies, through the notions of multiple time and space that allow to manifest and construct subjectivities.

References

Baudrillard, J. (1997). *Full Screen: Myth-Ironies of the Age of Virtual and Image* (pp. 127-132). Porto Alegre: Sulina.

Foucault, M. (1995). *The Order of Things* (pp. 61-93). São Paulo: Martins Fontes.

Foucault, M. (2007). *The Archeology of Knowledge* (pp. 87-151). Rio de Janeiro: Forense Universitária.

Harvey, D. (2014). *The Postmodern Condition*. São Paulo: Edições Loyola.

Heller, A. (1982). *Teoria de la historia*. Barcelona, Ed. Fontanamara.

Levy, P. (1993). *The Intelligence Technologies: The Future of the Thought in the Cyber era*. Rio de Janeiro: Ed. 34.

Moles, A. (1996). Engineers and Inventors Today. In R. SCHEPS (Ed.), *The Emperor of Techniques* (pp. 59-71). Campinas: Papyrus.

Picon, A. (1996). The Dinamism of Techniques. In R. SCHEPS (Org.), *The Emperor of Techniques* (pp. 25-37). Campinas: Papyrus.

Santos, B. (1997). *By Alice's Hand: The Social and the Political in Post-Modernity*. São Paulo: Cortez.

Virilio, P. (1993a). *The Polar Inertia*. Lisboa: Publicações Dom Quixote.

Virilio, P. (1993b). *O Espaço Crítico*. Rio de Janeiro: Ed. 34.

Virilio, P. (1996). *Velocidade e política*. São Paulo: Estação liberdade.