

# DISTANCE EDUCATION AND ADULT LEARNING: THE PROPER THEORIES MAKE QUITE A DIFFERENCE WHEN QUALITY IS THE ISSUE

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C – Methods and Technology

5 – Continued Education in General

C – Planning Models

1 – Scientific Investigation

## **Abstract**

*This paper suggests that distance education will evolve as the adjusted solution to lifelong learning, an imposition of the information & communication age to individuals tuned in with current times and committed with the quality of their professional performances. And yet distance education is still considered a second-class-education complement to face-to-face education, and that adult learning, a novelty, is also not treated with the importance that it deserves. The use of the proper learning theories is considered crucial to quality in both areas and could compensate the tradition they lack. If good strategies lead to efficient educational processes, their impact over the teaching-learning culture will be positive. Corporate education, a facet of adult learning, is also most relevant to the success of today's organizations. We demonstrate that statements elaborated by Knowles, Moore, Papert, Gagné, Bandura, Weiner, among others, not only minimize well-known critical issues in distance education but, also, contribute to the creation of rich environments. In those environments, teaching and learning are facilitated, resulting in efficacious processes in which distance acts as an element of proximity between the two poles of education.*

## **Key-Words**

*Teaching and learning theories; Distance Education (DE); adult education; corporate education; Knowles, Moore, Papert, Gagné, Bandura, Weiner.*

## 1. Introduction

Still in the dawn of XXI century, we already have something clear: this century will evolve as a highly competitive and changing environment. Get informed, to know, to learn permanently with quality but in a quick way, are survival issues, essential to individuals and professionals in every knowledge domain. And it is in this competitive and changing scene that distance education – cause and product of the significant changes in our understanding of the actual meaning of education (Moore, 2007) – will assume a growing-importance role.

Studies issued at Online Educa Berlin 2003 (apud Pumarino, 2004) suggested that disciplinary-based knowledge, internationally diffused and registered, had delayed 1750 years to double in volume for the first time since Christianity. Since then, it doubled successively in 150 years, 50 years and, by 2003, at every 5 years. This means that in 2020, something like a dozen of years from now, knowledge is estimated to double in size in 73 days.

In terms of volume of data, in 2007, around 161 billion of gigabytes of digital information were generated along the year and this amount did not stop to exponentially grow since then. Along this year, and in spite of being one of the people more connected to the Internet, no more than 1, 5% of Brazilian learned at a distance. By May 2008, we had few changes in this “scene” because, in Brazil, in all and every social level, the majority of the population still doesn’t trust in teaching and learning at a distance. As example, current Brazilian educational laws still ask for “face-to-face moments” in distance courses, especially for learning evaluation.

And yet, while distance education still faces a series of cultural barriers, in our opinion, it “came to stay” and will grow stronger and stronger as this educational format is leaving a secondary role, when compared to face-to-face education, to assume a more relevant position in the XXIst century. Who is in the area knows that distance education, in spite of being still “young”, had already contributed to the evolution of education. The main contributions is the democratization of the educational process, through the overcoming of time and space limitations and the extension (as never before seen) of educational opportunities to different social groups. Just with this contribution, distance education is changing education for the better.

Since education by mail, a hundred years ago, passing through the United Kingdom Open University, distance education is showing that teaching and learning of quality do not need to happen necessarily at the same place and time. By widening the teacher-student-classroom universe, DE puts a light on the many functions that every pole of education – teaching and learning – has to efficiently play for the efficacy of the educational process, as the system it is. And this universe, now bigger, increasingly opens more opportunities for experiment and development of heuristics in every one of these poles. Education, a former “art” with only two “artists” (student and teacher, owner of the knowledge and inhabitant of an unreachable ivory tower), is profiting a lot of this situation, since it promotes more and more studies on the teaching-learning process.

A *graffiti* in the walls of Paris, by May 1968, accused: “Teachers, you are old”. The student revolution, at exactly forty years ago, did not disqualified

the age of the teachers but the antiquity of their methods, clearly expressing the idea that the teaching-learning dialog did not exist in fact. This phrase can be assumed as the first big claim for radical changes in education. Nowadays, we can also accept the urgent need for a change based on the technological evolution, which minimizes distances and radically alters issues like time and space between people and things.

The claim of 68 was “adopted” in many countries, including Brazil, where the move was enough violent, putting traditional education “against the wall”. At the same time, in Switzerland, the biologist Piaget gave continuity to studies showing that content and or teacher should not continue as central issues of the educational action. Instead, the focus should go the child (as individual), the real and only builder of the knowledge. With this assumption, he shifted the focus from the teacher or content to the target-public in education.

Before the end of the XXth century, more and more scientists turned their attentions to human learning, including the one made by adults. As a consequence of these studies, more attuned teachers began to leave their “ivory towers” and to be really concerned with the learning of their students. Education began to be understood as more than the “lonely art of the teacher”, to be understood as a process conducted by two poles - which had to act in tuning - to be well succeeded. Then, if education is a process and had different target-publics, different approaches are needed, clearly indicating that educational processes designed to children or young people should be different of the ones intended to help adults to learn.

Adult learning is a fast growing reality, as exposed by the secretary of DE of the Ministry of Education while celebrating Brazilian Distance Education Day, by the end of November 2007. He had this observation made: “Recent statistics indicate that, around the world nowadays, more adults than children or young people are registered in educational institutions”.

And yet, in 2001, Morrison et al., to mention adult learners’ characteristics in a chapter focusing on learner analysis and educational context, named the topic “Characteristics of non-conventional learners”. The chapter has the following sequence of items: Culturally Diverse Learners, Handicapped Learners and Adult Learners. They meant to stress, by 2001, that the homogeneity of the usual learner population was reduced by a new group of learners, the adults, showing that education is now a lifelong task.

The authors identified various situations that compelled adults to the studies: adults who went to universities and high education institutions in search of a professional education and career; adults who engaged in community’ s adult education programs and adults who participated in corporate educational programs to build knew knowledge and develop new skills in business, in the industry, in the health area, in the government and other.

This is a quite notorious change in the educational area, which should accelerate big changes in the organization of educational processes. It points to a trend, still not perceived by everyone: lifelong learning is a personal and professional survival issue.

It is a fact: education, since ancient times - when slaves, called pedagogues, taught children face-to-face - changed very little. And, in less than

hundred years, two new phenomenons appeared to challenge education: adult learners and distance education. But, what are a hundred years in the long history of education? Saba (apud Azevedo) gives us an answer: "We live in a period of transitions in which we have a foot on the old and another on the new. We need a strong theoretical basis to reconcile the contradictions and dichotomies and give support to theoretical and practical advances in a foreseen future".

Let us see, then: along centuries, who educated face-to-face had enough time to ameliorate strategies (heuristics), more recently with the help of the theories – usually based on cognitivism – and also, by the practice of them. On the other hand, who is currently teaching at a distance has, in the maximum, some few years of practice and maybe, do not ever think of using theories or has no idea of what theory to use. Beside what is seen in seminars, symposia and congresses, the truth is that is hard to identify, behind the strategies planned to the processes of teaching-learning at a distance, a theoretical foundation to support them. When it exists, Piaget and Vygotsky still remain as the only ones trusted.

The main question brought by this paper is: why not to use a theoretical foundation to substitute the still scarce practice in distance education, in order to more objectively and effectively work with this format? It is quite vast the scientific knowledge about the human being and his learning process and theories can help when one look for quality.

For us, now is the time, because, as suggested by Tapscott (apud Radford, 2000) "a society moved by information offers clues that a rethink of education and of the relationship among work, learning and daily life". This rethink should necessarily pass through the application of scientific knowledge in projects of education to happen at a distance.

The purpose of this paper is, then, to show that, since the beginning of the project of an event to be delivered at a distance, we can use various theories -some of them still very little known in Brazil- which are proper to the learning of adult individuals and to distance education. While not questioning the huge importance of Piaget and Vygotsky, we firmly believe that distance education made in Brazil will become richer when postulates of many other (much more proper) theories are applied to these novelties of the educational field, serving as foundation to successful strategies for the teaching and learning for adults, to be make at a distance.

The right considerations about the educational process itself; adequacy to the context and to the target public plus the use of proper theories: a certain formula for quality and success of distance education for adults.

## **2. Advancing the “arts” of teaching and learning at a distance with the use of teaching and learning theories**

Along centuries, education was (only) for children, being the “art” dominated by teachers all over the world and their “art” was considered unquestioned. Sometimes, if the “artist” was competent, the “art” (the course, the process of teaching-learning) resulted in success and the child “was transformed” (molded as) in an informed/educated adult, perhaps motivated towards knowledge.

At the dawn of the last century, scientists began to study the act of learning, firstly by observing rats and other animals in laboratories. By the half of that century, psychologists and other experts came out from the laboratories to observe human learning where it happens. One of these experts, Piaget, observing at home how his children learned things, came to a notorious theory on the genesis and development of intelligence, which made him internationally known as one of the major scientists of all times.

In the second half of the XX century many scientists turned themselves to the learning made by adult individuals in the professional context, very much probably because to observe adults learning in educational institutions (universities, colleges etc.) was the same as to “invade” the absolute reign of the teachers, what could appear to be a questioning on the “unquestioned art of teaching. The rule to prevail was: the student could be assessed, not the teacher, and then, one could only observe adults learning in other environments than at the school.

From these studies emerged consistent knowledge on how adults learn and this knowledge has been, since then, well organized – together with other focusing learning at childhood - as learning theories, with descriptive nature. These theories generated teaching theories, which are prescriptive. Some of them are proper to orient the educator on how to face the challenges of adult education.

Essential results of these advances on the knowledge of human learning lead to the understanding of the unfolding of the teachers’ functions in the educational processes and to the clear definition of each of these roles. Various authors, among them Berge (1955), Feenberg (1986), Gulley (1968), Kerr (1986), McCreary (1990), McMann (1994) and Paulsen (1995), according to Salomon (apud Azevedo), contributed to the knowledge on the issues.

At the same time, distance education, which began as education for correspondence, had its development sped up with the - new information and communication technologies. But its definition remained as the “format in which student and teacher are separated in time and space”...

Only by the final years of last century –probably under the influence of the theory of interaction at a distance- we finally came to the understanding that this “separation” (or distance between teaching and learning) can be overcome with the use of the new technologies and through a good project, what was showed by teachers and students all over the world. It is now clear that interaction can overcome the physical and temporal distance, and what really matters is the dialogue between teaching and learning, which facilitates learning. Good projects and a virtual dialogue seemed to result in successful distance teaching-learning processes.

The Internet, with its ever changing possibilities and special adequacy to the development of collaborative and social learning had influence in the growing complexity of issues related to distance learning, according to Farid Saba (apud Azevedo), famous theoretician of the education at a distance

Continuing in this reasoning, also new developments in areas like adult education brought growing complexity to the distance education scenario. All these developments, together, made of distance education nowadays "a

complex phenomenon, constituted by various interrelated factors, which change along time", according to Saba, "manifesting many of the characteristics of a system".

And yet, it is true that, excepting a scarce number of theories usually applied, very little scientific knowledge is used to support the heuristics that translate the educational practice in daily life. We can say that education designed for children – because it was the one alone along centuries – has been more benefited by the use of theories.

### **3. What theories to use, when and why to use them to support the strategies of quality for adult education to be delivered at a distance?**

"Distance education can be defined as a complex teaching-learning system, with hierarchies, non-linear, dynamic, self-organized and oriented by purposes". This is Saba's definition for distance education. Well, "the common denominator to all definitions of system is the idea of interaction" (Davidson). Then, going deeply in the description of distance education and approaching the course level, we came to the set of strategies, actions, reflections, performances and resources which, when they interact like an efficient system, the result is a rich environment, which facilitates teaching and the reaching of the learning objectives by the learners.

Various theories can serve the different stages of an educational process, be it at educational institutions or in companies. Bellow is a list of some of the many teaching and learning theories which can serve to the reach of efficient strategies. It is impossible to mention all of them in here, especially when we understand that for each educational situation there are theories which are proper than other, and yet these other are enough good as support...

And since we are focusing on adult education at a distance, we identify here some of the many theories that can bring quality to our projects. It is relevant to stress that, when we focus distance education, opportunities of interaction with content and interaction among participants should be promoted along the whole process, because in them reside the two poles of education, the teaching and the learning, as a double loop. Besides, the target public should be entirely committed to its learning, so that the interactions happen and the consequent learning occurs.

We suggest a series of examples on when and how to use theories in educational projects, identified here at the many phases of a project. In the planning phase we first define the project's "philosophy", the assumptions, the values and attitudes which will filter our interpretation of the educational situations and decisions about teaching, learning and evaluation, to give shape to the project as a whole. According to Salomon (Morrison ET al., 2001), very few designers really reflect about this fundamental issue, which will directly influence educational results.

To the author, who works in the educational technology area should have in mind three basic principles: systemic approach is the basis of design; learning is a change in knowledge, attitudes or performance and success (efficacy) is the presumed result of any design process. It argues that our philosophies influence the way we give sense to the values but, most of times,

we are so involved with our lives that we forget to consider our values and assumptions. Thus, we should plan/design integrating the following aspects:

- . Orientation to the process: focusing on the building of relevant learning experiences to the learners;
- . Orientation to the product: focusing on the development of materials (of quality) to facilitate learning and
- . Orientation to the environment: focusing the building of a “climate” to promote and support learning.

According to Salomon, from a philosophical perspective, these three orientations lead usually to results that change knowledge, skills and attitudes. If the designer has a clear understanding of his/her focus (in the process, in the material or in the environment), it is quite sure that he/she reach success. Thus, Salomon recommends focus on the philosophical questioning in the planning phase, for he argues that it can help instructional designers to come to solutions of quality, compatible with their objectives.

Taking this suggestion into account, it seems that to look for a theoretical support for teaching-learning processes for adults to be delivered at a distance in theories proper to distance and adult education is a sure initial decision.

Malcom Knowles, for instance, theoretician of adult learning (Andragogy), developed various postulates identifying the essential for planning and designing educational processes for adults. Morrison et al. (2001) understands that the field of adult education is enough studied, since Knowles. According to him, who is in the area recognizes a series of generalizations related to adults and his accommodation to the educational process:

- . Adults come to educational programs with a high level of motivation to learn. They appreciate programs which are structured as a system, with the learning objectives clearly identified;
- . Adults want to know how the course content will benefit them. They expect the materials to be relevant and briefly understood about their practical use;
- . For adults, time is a most relevant issue. They expect that the class begin and finish on time and don not want to lose time;
- . Adults respect a teacher who completely understands the course subject and who presents it effectively. They easily detect an unprepared teacher;
- . Adults bring to the course experiences from their personal and professional lives. These experiences are to be used as relevant resources to connect to the knew knowledge;
- . More mature adults are self-driven and independent. While some have lack of confidence and need support, the majority prefers that the teacher be a facilitator to guide them and not an authoritarian leader;
- . Adults want to participate in the decisions. They want to cope with the instructor in a mutual search of needs, objectives and activities and in decisions about how to assess learning;
- . Adult learners can be less flexible than younger students for their habits and operation methods are routine. They do not like to be placed in embarrassing situations. Before they accept a new way to do something, they need to understand the advantages of the adoption of the new method;

. Adults like to cope in groups and to socialize together. Activities to be done in short groups and in an environment favorable to interaction are of the most importance.

Morrison concludes that, for adults, as for other learners, the well known principles of human learning and performance should form the basis of the educational program. The degree and the specificity in the application of these principles among various groups is what differ in the planning phase, when the means are defined and the activities are proposed. To be sensitive and alert to the characteristics of these groups, the designer should plan programs which are effective to them.

Now we take the theory of interaction at a distance or transactional distance, from Michel Moore, who extended John Dewey, Boyd and Apps' s studies about interaction, and understood distance as an educational phenomenon and not a simple geographical issue. The theory advocates that "interaction at a distance is the gap of understanding and communication among teachers and students, caused by the geographical distance to be overcome by means of differentiated proceedings in the elaboration of teaching strategies and in the facilitation of interaction".

The understanding of this concept is of the most relevance when one deals with the planning of a distance education event, since it reveals a causal circle between structure and dialogue. According to Azevedo, Moore introduced two major concepts: - "virtual contiguity", contrasting with "separation between student and teacher" and the dynamic relationship among dialogue, autonomy and structure.

Both concepts serve to orient the planning of educational processes to occur at a distance in the sense that they give a basis to the teacher action in a distance education event, especially to the support to be given to every student/learner. For instance: those who are more autonomous require less course structure while those more dependent of the teacher' s "figure", require more support from him/her.

Let us take the Constructivism/Constructionism, from Seymour Papert, as example, to see how it can serve as foundation to teaching-learning processes for adults, to be delivered at a distance. Papert elaborated (1994) a "theoretical reconstruction" of Piaget' s constructivism when it reaffirms that one of the key issues of development is the action of the individual on the world and the way how this action is converted to an internal process of construction (Lemme).

Lemme relates other piagetian postulates adopted by Papert, which can serve as support to the planning of educational processes and serve, mainly, to the formation of teachers, in the phase of development: "The ideal teacher is the one who enriches the teaching-learning environment, promoting challenging situations in which the learner actively make his/her own discoveries", since, "individuals learn/think interacting with the environment, elaborating and re-elaborating hypotheses, building his/her own intellectual structures and facing stimuli and from his/her own mental schemes, formulate hypothesis, trying to solve these challenging situations".

To use Constructionism to support educational processes is to take into account a key-issue proposed by Papert: How to create means to more knowledge acquisition by the students/learners?

To orient the development of the educational event, Lemme translate the “constructionistic” attitude of a teacher: “to teach, producing the maximum of learning with a minimum of teaching”, looking to activate the student’s learning by valuing his/her mental construction, understanding that this construction is supported by the constructions made by the individual in his/her interactions with the world”.

Taking into account that the learners are immerse in different realities, and, as professionals or social individuals, they act in diverse contexts, suffer influences and influence these contexts, educators should have in mind, permanently, the following question: how can I promote rich learning situations, in which the interaction (not only between mediators and learners but, mainly, among the learners), be a constant? And when we look for inspiration in the interactionistic theories from Lev Vygotsky and Paulo Freire, we can find the answer. Vygotsky’s, because it goes beyond the proposal that learning is essentially a social action and Freire’s, because it puts educator and learner in a dialogic process, interacting as subjects in a process he called “transforming education”.

To design a rich learning environment, Papert – according to Lemme – supplies elements when He emphasizes “the importance of the knowledge construction, in concrete thinking, being heavily solid, developing the relevant mental entities, enlarging the individual’s capacity to act on the world”. Thus, “the contextualization of the teaching-learning process is an unequivocal strategy to support the construction of knowledge/mental structures by the learner”.

According to her, beyond the cognitive processes, Papert supplies also elements which can interfere in the students’ affective processes along the course: it is when we focus on the connections between new and previous knowledge and experiences. Various theoreticians point to be these connections a crucial issue in adult education (Papert, Freire, Ausubel). They suggest that “we motivate ourselves to learn something new since we find it significant to us. For this to occur, it is of the most importance the connection between the existent mental entities for the evolution and the building of new mental entities” (Lemme).

The theory of Significant Learning, of David Ausubel, suggests learning situations organized according to the relevance of content that has direct significance to the learner and strategies that favor learning (ex. The advance organizers, which activate “hooks” for the new knowledge to be inserted). This theory’s postulates can serve as inspiration in the identification of themes and content that motivate public’s interest and for the planning of effective pre-instructional strategies.

Another theory that can support teaching-learning processes to be delivered at a distance is Robert Gagné’s Conditions of Learning. Gagné, an American educational psychologist - little known in Brazil - who died around five years ago, began to study adult learning by 1960. He identified nine phases or internal conditions of learning, which occur inside the learner. These nine

phases can be activated by proper instructional strategies, which correspond to nine steps (or external learning conditions or instructional events).

On the other hand, the Modeling theory (from Albert Bandura), is essential when one plans online learning, to demonstrate the correct manner to do something. The teacher/facilitator can offer a “model” of behaviors and attitudes to be learned, while objectively interacts with the group, congregating and integrating concepts, and by openly “playing roles” at the forum.

Corroborating postulates of theories previously mentioned, Bernard Weiner, in his Attribution (Motivation) theory, suggests that significance and contextualization facilitate learning. This theoretical basis supplies interesting elements which support strategies to motivate participants in the teaching learning processes.

Thus, as we can perceive, the use of the proper theories can lead to quality, mainly when principles, patterns and indicators for the distance education process are established. In the presentation of the paper, at the 14<sup>th</sup> CIEAD, we will consider some principles, as the presented below, and will relate them to theories which favor them:

- . Teaching, learning and evaluation are distinct issues that should be treated as an integrated system;

- . The teaching-learning processes do be delivered at a distance should be planned, designed, developed, implemented and evaluated with competency, resulting in a rich architecture, which promotes learning while accommodates the different cognitive and learning styles;

- . The learners, target-public of each educational event, are the protagonists of the learning process, to be responsive for the building of the competencies (Knowledge, Skills and Attitudes/Capacities), from their individual and collective learning strategies;

- . The teaching and evaluation strategies, to be conducted at a distance should be built from the characteristics of the target public and the competencies to be learned (learning objectives);

- . Studies and researches on teaching, learning and evaluation are essential to the support and continuous betterment of the quality of educational processes at a distance.

#### **4. Conclusões**

Adult education and distance education are still in their infancy in the educational universe, in which child education and the face-to-face format have a quite long existence. And yet, adults are a growing public in educational events and are the greatest users of distance education, especially due to the lack of time to face the growing “information boom”. Most of times, adults learn collaboratively, another novelty of the knowledge economy, whose infancy we are now living.

To increase the efficacy of teaching-learning processes to be followed at a distance by adults, educators have to be efficient in the planning, design and development of these processes. Teaching and learning theories are essential instruments to results of quality, which positively impact in the teaching-learning culture.

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