VIRTUAL LEARNING ENVIRONMENTS: POSSIBILITIES AND LIMITS FOR ITS USAGE IN CORPORATE UNIVERSITIES

São Paulo, May 2009

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Category (C - Methods and Technologies)

Educational Sector (4 – Corporative Education)

Nature (A – Research Report)

Class (1 – Scientific Investigation)

SUMMARY
We have been living in what some authors call the era of knowledge. In this sense the organizations have already noticed that investing in their collaborators is one of the ways of generating competitive advantages. Starting from this presumption, the question that led this work comes to the surface: how is it possible to create a friendly environment for the generation, development, dissemination and management of the knowledge, in the Corporative Universities – CU, through the Virtual Learning Environments – VLEs ? Aiming the answer to this question, a survey was done about the subject, followed by a data analysis performed by Instituto Monitor, published by the Brazilian Statistics of Distance Open Education Yearbook – AbraEAD, in 2005, 2006 and 2007. The main results reveal that a DOE, through VLE becomes a powerful tool for the CU, but with some exceptions in relation to the: costs involved in all the process; organization's summit members involvement and commitment; courses offers with well defined objectives for the assurance of quality interlocutions; to the autonomous character development and collective learning; effective pedagogic mediation.

Key-words: Virtual Learning Environments, Corporative University and Knowledge Management.

Defining Corporative University

The expression 'Corporative University' – CU comes from the literal translation from English *Corporate University* that was born with the partnership between the Universities and the Enterprises. It's worth mentioning that a CU cannot be just a University or Just an Enterprise, being necessary a very well articulated junction between the scientific rigour of the academy with the practical focus of the enterprises.

This is why the CUs have been gaining prominence in the organizational scenery, as starting from the knowledge entanglement of these two ways the employee besides building his/her knowledge, realizes the role that his/her function performs in the organizational process as a whole and the importance of this for the business success.

This way, it is stressed that the main objective of a CU is the development and the talent retention in the organizations. In addition, a CU, extends its activities to their suppliers, customers, subcontracted entities, partners, shareholders and communities of interest, in the search for profitable solutions for all involved shareholders in this chain of value (Meister, 1999)

Countless are the definitions for the designation CU. For Meister (1999, p, 29), the CU can be defined as "a strategic umbrella to develop and educate employees, *customers, suppliers and the community, so that entrepreneurial strategies of the organization can be accomplished".*

Yet Eboli (2004, p. 48) broadens the concept and states that a CU can be defined as "a people development system oriented by people's competence management through competence". It is worth highlighting that the expression 'competence' is not a synonym for 'knowledge', as competent is somebody who ads value with his/her knowledge and ability to an organization's results.

Creating a CU requires a lot of caution, since in spite of the good results promises, it's necessary to get organizations' summit compromising; financial resources assurance for the implantation, maintenance and development; efficient and continuous monitoring system and ; and people's commitment.

The follow-up and results evaluations, after a CU's creation, are important aspects, as they allow the business results initiative impact measurement and the maturing proposal level, allowing alternatives for possible heading corrections, being it vital for the survival assurance.

The importance of the Knowledge Management in the CU

 We are living what some authors, for example, Davenport and Prusak (2003), Nonaka and Takeushi (1997), Senge (1998) call 'the era of knowledge' but there is inside the organizations, as highlight Davenport and Prusak (2003), a confusion about the expressions 'data, information and knowledge'. Many times these expressions are used as synonyms, but they aren't. The importance of having these concepts well defined can assure the success or the failure of initiatives to create a CU. Davenport

and Prusak (2003) define very well each of these expressions. This way, 'data' is a set of distinct facts and objective, related to an event (p. 2). Information is "*[...] a message, generally in the form of a document or a visible or audible communication*" (p. 4). 'Knowledge can be defined as "*[...] the fluid mixture of condensed experience, values, contextual information, and living insights that proportionates a structure for the evaluation and incorporation of new experiences and information".* (p. 6)

Taking a supermarket for example, when a customer buys a product we have a datum, when the monthly sales data are grouped, generating a sales report, the data are transformed into information. Knowledge would be the decision made by the information data analysis, for example, the definition of a new strategy to attract customers. The knowledge would be the decision made, after the information analysis, for example, the definition of a new strategy for the customers' attraction.

Nonaka and Takeushi (1997) have classified the human knowledge in two types: explicit (can be articulated with the formal language, easily communicated, systemized and put across to individuals) and tacit (that one which is personal, incorporated to the individual experience and involves intangible factors, as for example, personal beliefs, values, insights, emotions, abilities, etc. being considered as important competitive advantage source). The authors stress that the tacit knowledge and the explicit one complement each other, and the interaction between the same is the main dynamic of the knowledge creation, giving life to the continuous process of the knowledge spiral (externalization, socialization, combination and insight).

The knowledge is vital for the organizations, since it is adaptable to the quick environment changes, allowing the continuous improvement of processes and being "able to identify opportunities that others haven't seen yet and to exploit them to the most" (BROWN *apud* REGO JR., 2001, p. 222). Another aspect to be considered, is the quick obsolescence of this knowledge and the need of generating those entailed to the critical businesses success factors, this is why it's necessary an effective knowledge management process. Bukowitz and Williams (2002, p.17) define knowledge management as "a process through which an organization generates wealth, starting from the knowledge or intellectual capital", but to align the knowledge management model to the organization's strategies does not constitute and easy task, since it is necessary to potentialize the médium and long term objectives, besides evaluating direct and indirect and, tangible and intangible results. To achieve this, it's

necessary to manage the knowledge proceeding from the areas that exert the largest influence to the results, due to the cost –benefit relation.

The organization and the knowledge systematization, in the operational levels, tactic and strategic, constitute a process in constant assembling, in view of company's needs of keeping competitive. It's for this reason that a CU cannot be created just for the purpose of being a space for generating knowledge, for the fact that knowing a lot about a subject does not maximize the competition power. This is only possible when it comes allied to a knowledge management system, capable of creating and implanting processes that generate, store, manage and disseminate the knowledge and make its application viable. This process is favoured with the application of Virtual Learning Environments (VLEs).

Virtual Learning Environments – VLEs and its application in the CUs

The Distance Education - (DE), more and more have been adopted by the organizations, for being a tool with great potential for the creation, development, disseminations and knowledge management. The DE makes with which the CUs' initiatives, for the internal and external public as well, be potentialized, by offering speed, agility, adequate content, information availability in the needed moment. With the use of Internet, a cost reduction is verified mainly due to the unlimited reach and accessibility of the same, through the network communication services expansion, as for example the electronic mail, discussion forums and instant messages, and to the outbreak of softwares for the web pages construction and for the development of learning system management (Virtual Learning Environments – VLE).

As a result of these developments it is possible to think about CUs with headquarters in the cyberspace, not needing physical space to exist. The virtual CUs are important as they have become an excellent option for the institution of a continued learning culture with a broader reach. (Kenski, 2009). This mode also known as e-learning, that according to Rosenberg (2002, p.25) can be defined as a "Internet technologies utilization for the supplying of a set of solutions for the improvement of the knowledge and performance", it also makes it possible an andragogig learning, ie, "involves the integration between reflection and action" (Kenski, 2009, p. 246), at the same time that it allows that an interchange between the individuals for the collective knowledge construction and for the diffusion of the organization values, getting rid of the barriers of time and distance and so potentializing the invested resources. It is

possible to learn respecting the pace and time of each one starting from contents previously elaborated by the organization or by specialized organization.

The investments in this modality grow up as the benefits of DOE is perceived, one example for this is the transportation expenses reduction once the learning can occur mediated by the existent Technologies, specially by the VLEs. Another example refers to the possibility of creating personalized courses, planned according to the actuating area of the organization. The DOE incorporates as a main resource the possibility of generating continuous knowledge through the learning communities, becoming and important resource for the continued learning.

Several are the available tools in the VLEs to share the knowledge and to favor the development and necessary abilities so that the organization objectives be reached. Between them we can highlight: on-line conferences, thematic forums, collective texts, chats.

Many are the VLEs available options in the market, for example we have the Saba and the Docent in the corporative area and the WebCT and the Moodle in the academic area. Although they can differ in the details as the user interface, interactivity and bandwidth, the standard delivery infra-structure is the internet.

To develop a Corporate Education – CE software, in the mode e-learning, becomes a challenge for the organization, as it's necessary to assure the infrastructure and the suitable technical support; effective administrative management; professionals with the necessary competences; pedagogic resources and quality contents.

By the construction occasion, in the case the organization decides to develop its own VLE, or by the acquisition occasion of one, as per SANTOS (2003), some questions need to be equated: a) the need of creating an hipertextual environment that aggregates intertextuality, intratextuality, multivocality, navegability, simplicity, easiness, multiple language integration and midiatic support; b) the need of potentializing the syncronous and asyncronous communication; c) the need of developing activities starting from problematic situations, making it possible to realize the connection between local and global matters, and having respect for the cultural universe of the involved subjects; d) the need of developing an environment that allows that the learning process be built starting from a communicative and negotiated process, making it possible the re-signification of the collective learning process; e) the need of providing resources that make available and motivate ludic activities.

It's necessary to remember that the best and most modern technology will not assure that the CUs' developed activities be a success, if this process focus is not the involved people.

Research Methodology

The present study analyses the data regarding the resources utilized by the CUs active in DOE, with a focus on e-learning. The data were collected by *Instituto Monitor* in the years 2005, 2006 and 2007 and published in 2006, 2007 and 2008 respectively, in the *Anuário Brasileiro Estatístico de Educação Aberta e a Distância* - AbraEAD. This research had the support of the *Associação Brasileira de Educação a Distância* – ABED and from *Secretaria de Educação a Distância* – Ministério da Educação.

Knowing and analysing the data

The research realized by *Instituto Monitor* started with the sending of questionnaires to the organizations registered in its data bank and in the data bank of Ministério do Desenvolvimento, Indústria e Comércio – MDIC as well. Of the organizations to where the questionnaires were sent to, 21 answered details about the year of 2005, 27 about 2006 and 41 about 2007, these organizations compose the sampling.

According to the data, the CUs' target people programs were concentrated, as shown on Chart 1, on the direct employees and sub-contracted people. The remaining members of the productive chain, as for

Research year : 2005	Freq.	%
Direct employees	10	34,5
Direct employees and sub-contracted people	9	31,0
Others	9	31,0
Sub-contracted	1	3,4
Total	**29**	**100**
Research year: 2006	**Freq.**	**%**
Direct employees	16	50,0
Direct employees and sub-contracted people	9	28,1
Others	7	21,9
Total	**32**	**100**
Research year: 2007	**Freq.**	**%**
Employees	37	90,2
Non-hired people	19	46,3
Others	6	14,6
Total	**41**	**100**

CHART 1: Courses Target People
Source: AbraEAD, 2006, p. 99 / AbraEAD, 2007, p. 114 / AbraEAD, 2008,

example: suppliers, customers, shareholders and interested communities were not nominally mentioned, but they may be part of other occurrences. This shows that the main Corporate Education – CE focus in the interviewed organizations, still are the employees but not all the value chain.

	2005		2006		2007	
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**
Operational	20	69,0	23	71,9	33	80,5
Supervision	19	65,5	21	65,6	29	70,7
Management	17	58,6	21	65,6	26	63,4
Board Directors	8	27,6	11	34,4	9	22,0
Presidency	4	13,8	4	12,5	3	7,3
Others	3	10,3	4	12,5	2	4,9
Total	**29**	**100**	**32**	**100**	**41**	**100**

CHART 2: Hierarchical Levels Studied
Fonte: AbraEAD, 2006, p. 99 / AbraEAD, 2007, p. 115 / AbraEAD, 2008, p. 102

It's noticeable on Chart 2, that there is a concentration on the operational and tactic levels, which percentages have been increasing, and on the strategic level there have been a reverse move showing a percentage reduction. This shows that the organizations are concerned in developing the critical competences to the business, irrespectively of the employee's performed activity in the organization. On this line Nonaka and Takeuchi (1997, p.15) claim that "the responsibility for the knowledge generation is not exclusive to a specialists group or department, ie, front line employees, managers and directors, each one has to accomplish his/her share in this process through a dynamic interplay between all the involved ones".

The development of a course constitutes a hard task as it falls on activities that comprise the elaboration stages of pedagogic strategies and content adequacy, production and publication of the course and fundamentally, follow-up strategies. Contemplating those topics does not assure the course success, as it also depends on other elements, but it minimizes the booming evasion risks.

In spite of the evasions that happen, the e-learning more than ever, represents a continued education possibility to the people and to the organization.

This becomes clear when Chart 3 is observed as it shows the more often used medias for DOE courses. Of the mentioned medias the higher percentages refer to the e-learning and to the printed matter. Of the interviewed companies in 2005, 62% used the e-learning, this number in 2007 reached 83%, that is, it raised in three years 21%. A curious fact to be observed is the expressive printed media growth. The same was equivalent to 34.4% in 2006 and went

	2005		2006		2007	
	Freq.	%	Freq.	%	Freq.	%
E-learning	18	62,1	26	81,3	34	82,9
Printed Material	7	24,1	11	34,4	23	56,1
Television	5	17,2	5	15,6	3	7,3
CD-ROM	5	17,2	6	18,8	6	14,6
Vídeo	4	13,8	7	21,9	8	19,5
Videoconference	4	13,8	7	21,9	11	26,8
DVD	2	6,9	7	21,9	7	17,1
Phoneconference	-	-	-	-	6	14,6
Satellite	-	-	-	-	5	12,2
Radio	-	-	-	-	1	2,4
Cellphone	-	-	-	-	1	2,4
Others	-	-	2	6,3	4	9,8
Total	29	100	32	100	41	100

CHART 3: Most used media at DOE courses.
Source: AbraEAD, 2006, p. 102 / AbraEAD, 2007, p. 117 / AbraEAD, 2008, p. 105

up to 56.1% in 2007, that is, raised to 32%, a higher growth than shown by the e-learning. This data calls the attention as it is an unidirectional media, differently from the e-learning that through the VLEs, make it possible a bidirectional communication, assuring a larger interaction between the participants.

The most used media can be divided in 2 groups: a) **communication media**: e-learning, videoconference, teleconference, cellular telephone, satellite (synchronous); b) **message reproduction media**: printed matter, DVD, CD-ROM, video, television, radio (asynchronous).

It's worth stressing that the e-learning is made up of several media that allow the synchronous and asynchronous interaction ways.

Getting back to the statistics data, it's also noticeable that the shown figures focus still are the asynchronous media, implying that this happens due to the involved reduced costs. Offering courses in the e-learning mode mediated by the VLEs, does not mean creating a learning material and distributing it to a large public, but a creating a course and making adaptations during the learning activities.

The organizations noticed several advantages in opting for the DOE mode, as can be observed on Chart 4, but all of them are focused on two keywords: time and space.

Advantages	2005		2006		2007	
	Freq.	%	Freq.	%	Freq.	%
Time flexibility for the students	19	65,5	23	71,9	34	82,9
Agility	18	62,1	19	59,4	31	75,6
Costs reduction	17	58,6	23	71,9	29	70,7
Reach and range	17	58,6	24	75,0	30	73,2
Access put available to the student	16	55,2	18	56,3	28	68,3
Flexibility of space to the student	12	41,4	15	46,9	25	61,0
Less interference in the job routine	12	41,4	13	40,6	20	48,8
Total	29	100	32	100	41	100

CHART 4: Advantages of DOE's usage by the organizations. AbraEAD, 2006, p. 102 / AbraEAD, 2007, p. 118 / AbraEAD, 2008, p. 106

The mentioned advantages, taking the e-learning as an example, can be jeopardized when the design is not attractive.

The environment layout simplicity make it possible for the participants to learn how to use the technology while they attend the course, having this way more time for the content involvement and active participation in the environment. Nevertheless some VLEs assume difficult hard surfing aesthetics which many times simulate the classic presential practices. It's possible to find out courses that use the same VLE, but with an incredible variety of pedagogic and communicational practices and postures. Such practices can be instructional as well as interactive and cooperative.

The e-learning must consider the student as an active person and capable of determining the ways that he/she intends to follow for the knowledge construction, making with which the VLEs overcome the characteristic of mere content warehouse, making it a live organism and in constant change.

It's necessary to create pedagogic practices that are not concentrated in the content distribution and coercive homework collection only, without pedagogic mediation, in which the tutor's role constitutes a bureaucratic and banking management of the learning process. In the interactive and cooperative practices the course content (design and communication) is constituted by the individuals in a process of authorship and co-authorship in which the interactivity is the fundamental characteristic of the process.

Other obstacles as for example the available time, each one's rhythm, difficulties, technical doubts, interpretation problems, non-clear contents, etc., can also be a cause for absences and not interaction among the involved in the process.

The carelessness about some of the previously mentioned items can cause many problems that turns into disadvantages to the organization, as can be seen on Chart 5.

	2005		2006		2007	
Desadvantages	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Lack of familiarity with the method	11	37,9	12	37,5	10	24,4
Evasion	9	31,0	15	46,9	10	24,4
Impersonality	8	27,6	6	18,8	11	26,8
Implantation cost	7	24,1	10	31,3	11	26,8
Participants monitoring	6	20,7	5	15,6	2	4,9
No disadvantages	2	6,9	2	6,3	8	19,5
Others	1	3,4	4	12,5	4	9,8
DOE's lack of culture	-	-	-	-	3	7,3
DOE's lack of specialized workforce	-	-	-	-	1	2,4
Total	**29**	**100**	**32**	**100**	**41**	**100**

CHART 5: DOE's disadvantages for the organizations
Source: AbraEAD, 2006, p. 103 / AbraEAD, 2007, p. 118 / AbraEAD, 2008, p. 106

About these problems we can deduct that they have been overcame little by little. The evasion for example, had a significant reduction from 2006, 37.5% to 2007, 24.4%. Considering that it is a recurrent factor in distance courses, as the literature in the area depicts. It is stressed that the course success is directly influenced by factors like: program clear definition, correct didactic material usage, correct usage of the appropriated means that make it easy the interlocution. Besides these points, the evasion can also be influenced by individual and regional needs.

An important aspect to be observed in the chart is that the number of organizations that didn't mention DOE's usage disadvantages, significantly increased from 6.9% in 2006 to 19.5% in 2007.

It's possible to develop a favorable environment in the CUs for the knowledge generation, development, dissemination and management, through the Virtual Learning Environments – VLE, when potentialized the mentioned advantages by the organizations and when the disadvantages can be corrected or minimized starting from a well structured, multidisciplinary and capable team, that is able to elaborate distance graduation projects that aim the interactivity, independence and flexibility to the students, providing great utilization.

Considerations about the journey

The VLEs constitute an important tool for the creation, development, dissemination and knowledge management by the organization, since they have several resources that potentialize actions into that direction. In these environments it is possible to develop synchronous and asynchronous learning processes; to share experiences among the participants (in a tacit knowledge externalization and socialization process); to realize interventions that lead to reflections, that generate answers that produce new questions that conduct to new answers in a continuous process of socialization, externalization, knowledge combination and socialization in the preaching line of Nonaka and Takeushi (1997).

In this work some reservations were presented pointing out to the organizations needs of not choosing to develop CE programs, in the e-learning mode, believing they will minimize costs. This is partially true as savings are made with the elimination of several commuting expenses and the need of having a physical space allocated for such purpose. However, the support infrastructure for the e-learning courses mode, implies in a high initial cost, where it's needed, for example, that all members of the summit give support to the project since the choosing or development of the VLE that will mediate the learning activities of distance learning, passing by the elaboration stages, development, application and follow-up of these management knowledge systems.

Another important point to avoid possible disadvantages is to have a well defined objective, so that the collaborators feel that they are integral part of the knowledge

construction process, potentializing learning process and the consequent knowledge management.

The e-learning success or failure mediated by the VLEs do not depend just on the best and more modern technological tools. But these tools bring with themselves a very important opportunity for the CEs growing programs, since they allow to improve the quality of the target people. Such improvement is very important as it justifies the initial costs and make with which the organization has a differential in the fight for competitive advantages.

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