

The “Corporate University” as Technological and Scientific Support of the Virtual Education in Latin America

Abstract

The technological and scientific world is more complex every day, to innovate from within the minimum requirements include: top knowledge, creativity, productivity and financial backing, otherwise this innovation would not be possible in a globalized and cybersocials environments.

On the other hand, there is an “engineering problem” visualized by the UNESCO. They stated that there is an annual deficit of 3 million of engineers, the projection by 2025 will be an annual deficit of 5 million. The core of the problem is that the youth does not want to be involved in a cognitive effort in the education that is currently being offered.

Taking the last statements into account (complex world, and, apathy to academic cognitive effort) there is an inquisitive question to develop the virtual education:

¿How can Latin America produce the virtual education it requires?

Additionally, Latin America does not want and must not transform from being an underdeveloped region to be a cybercolony. Especially in an educational cybercolony.

Must we be prevented with the virtual education that comes from developed countries?

The objective of this document is to present “corporate university” as a strategic ally in Latin-American universities in:

- *Scientific research in the implementation of the virtual education for our educational idiosyncrasy*
- *Development and implementation of technological platforms for the virtual education.*

We hereby introduce the LatinCampus Corporate University organization which in actuality assist more that seventy (70) universities in eleven (11) countries, and have placed a larger effort in the following investigations:

- *Pedagogy and Didactical abilities for virtual environments.*
- *Develop a “mathematical equation” to propend the pertinent virtual education.*
- *Build e-content for cybersocial environment with a sense of pertinence*
- *Design a next-generation LMS/LCMS platforms (artificial intelligence agents, and robotic agents)*

The scientific research with technological development has as a goal to prepare Latin-American universities and the corporate universities, using the virtual education.

Author name(s) and affiliations(s)

Eduardo Cote
President

Organization LatinCampus Corporate University
eduardocote@latincampus.net

www.eduardocote.net / www.educatronica.net / www.latincampus.net

Introduction

The world is more complex every day; we have achieved scientific and technological advances of such magnitude, that in order to generate innovation we require: *top knowledge, top learning abilities, creativity, productivity and financial backing*. Additionally, innovation must be generated in highly productive environments thus being competitive and sustainable in current globalized market economies.

The complexity in our days has taken our youth to be away from professions like engineering, in which the tutoring is developed as a major part of innovation required to maintain our “quality of life” that science and technology has envisioned for us. By 2025 we confirm the higher deficit of engineers which will border the five million annuals, and if we continue in this path we will certainly have a scientific and technological deceleration.

Nor the universities nor the virtual education are strangers to the “engineering problem”. With regards to this subject we can only foresee a global and cybersocial education, but the real productivity will change, then we ask ourselves.....

¿What type of engineers we will require to produce the e-learning, e-training and the equipment-trainer required sustaining the global e-content demand?

In Latin-American a vast majority - if not all – are currently discussing about virtual education, but, the reality is that they do not have the e-content nor the personnel to generate the pertinent e-content.

We currently possess the infrastructure in telecommunications, servers and platforms but we do not have the e-content. Is like having a new aqueduct but no water to deliver.

The solution we wish to present in this document is based on alliances between Universities and the “corporate university”, a figure that in Latin-America is completely unknown. The presentation of the facts contained herein speak about the scientific and technological advance we have done in virtual education and have established strategic alliances with universities in Latin-America so that this innovation may be visible to other universities in developed countries.

The strategic alliances of LatinCampus with universities in Latin-America are over seventy (70) universities in eleven (11) countries. By 2011, we foresee that we will have more than one hundred (100) universities in seventeen (17) countries.

The positioning and continuous growth of the organization dedicated to science and technology confirms that we are certainly in the knowledge era, and that we must be innovative to attain “partners for the journey”.

1. Areas of Innovation.

Initially we will like to introduce the areas where LatinCampus has done scientific and technological innovation which has allowed us to become competitive globally:

- ✓ Virtual Education equation
- ✓ The e-learning (theory)
- ✓ The e-training (simulated practice)
- ✓ Training equipment (real practice)
- ✓ The Mobile university
- ✓ The pedagogic e-eclecticism
- ✓ The didactic e-constructivism
- ✓ The e-content
- ✓ Alliances that overcome our borders

1.1. Virtual Education equation.

LatinCampus has launched the theory of the three (3) main components required to develop a competitive and integral virtual education. These are the components; the e-learning, the e-training, and the equipment-trainers. This theory has helped us to develop the following equation:

$$\text{Virtual Education} = \text{e-learning} + \text{e-training} + \text{equipment-trainers}$$

The vast majority of Latin-American universities only promote virtual education based on educability (e-learning or theoretic learning), without taking into account a fundamental components to attain labor competences: teachability (e-training and equipment-trainers to do real practices).



e-learning: theory



e-training: simulated practice



Equipment-trainers: real practice

1.2. The e-learning (the theory).

To produce a pertinent e-content to replace an instructor in its function when he or she teaches a class is not as simple as to generate a plain document (Word or PDF). We require a methodology that is didactical and practical in every sense – not expressed in instructional design - so that we may convert the content into e-content.

The following are some of the techniques used – becoming a part of a corporate image – that we apply to convert the content (presential instruction) into e-content (e-learning within a virtual environment):

- Color pedagogy
- Web usability
- Hypertext oriented towards contents-repository ecosystems
- Hypermedia oriented towards multimedia-repository ecosystems
- Academic iconography
- Dynamic Ideography

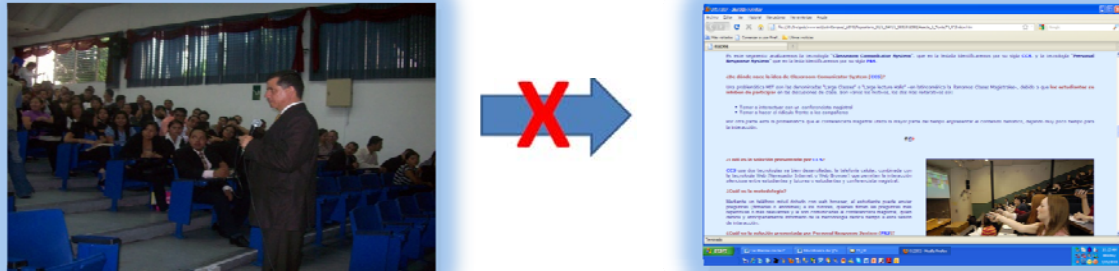
Corporate Image techniques allow the student and the instructor to respond and to become compromised with the corporate identity.

The corporate identity it's not a technique created to individualize instructional design; this is as “operative model” which covers the following subjects:

- The e-Content (materials and environments-platforms for virtual education)
- Learning activities (case studies, group discussion, interaction, interactivity)
- Referential systems (support thru the network, virtual libraries, Internet)
- Evaluation system and self-evaluation.

Convert the content (plain text) into e-content (pedagogical mediators) is the difference between having intensive lecture courses that only provides information and having an e-learning systems that promotes a complete formation of the individual.

LatinCampus like Corporate University has developed an e-content within its industrial park (located in Panama City) with the objective to produce e-learning systems (learning measurements) for the universities. The objective is to convert the materials and methodology that teachers use in the classroom into e-content.



An excellent presential intrusion does not guarantee an excellent e-learning

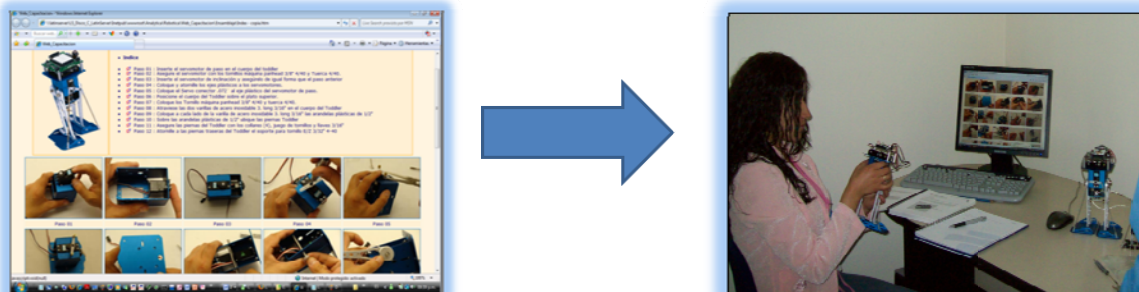
The Latin-American universities must have the capacity to migrate the American or European teacher's content into e-content that would be pertinent to our cultural idiosyncrasy. The Corporate University like LatinCampus can and should assume the technological and scientific role.

1.3. The e-training (the digital practice).

The integral formative process can not only be assumed by the educability component (the theory) but must be complemented by a teachability component (the practice).

If the student can benefit from their own time and their own space for the formation process, then he or she cannot have with a “permanent tutor” that can guarantee the learning process with a safe and secure practice with equipment-trainers, in consequence a digital practice is required (in a safe environment) so that be physical practice be performed (in a real environment). The e-training not only guarantees the security and safety of the student but also the institution's assets security like the equipment-trainers.

¿Which will be the real problematic of e-training in Latin-America? The answer is that universities do not possess specialized programmers as direct staff to develop the design and programming of digital simulators. This component which we named “engineering problem” affects in great measure the production of virtual educative environments.



The simulators are significant step toward learning

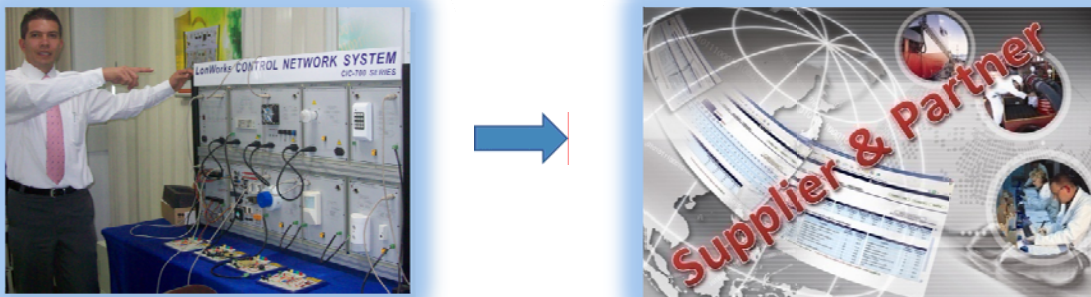
LatinCampus also as Corporate University has implemented an e-content industrial park with the objective of producing e-training systems for universities. Pertinent virtual education requires simulated practices in real equipment-trainer.

1.4. The equipment-trainer (The real practice).

The e-training as well as the e-learning generates mental competences within each individual, but they do not create any manual skills or mental processes that allow the acquirement of integral labor competences.

LatinCampus incorporated the didactic equipment-trainer to be easy to use and related to the field of study and is part of the third and last component to implement a cohesive and logical virtual education. For us and our way of thinking, the equipment-trainer is truly the one factor that guarantees the labor competences, especially in technological and technical programs.

In our vision, all the equipment-trainer should have an e-training system that trains the student with the correct manipulation and operation, and with an e-learning system that teaches the student on the science behind the technology.



The equipment-trainers are the final step to a concrete learning relevant to a real life.

As the Corporate University, LatinCampus signed a strategic Alliance with Korea, Taiwan, Singapore, Hong Kong and China to design a specific equipment-trainer where the e-content industrial park has developed virtual materials (e-learning) and educational environments (e-training) that are used by Latin-American universities.

1.5. The Mobile University

The e-learning and e-training are available over the Web in any place at any time; however the equipment-trainer because of their physical characteristics cannot be converted into bits or bytes, which in turn “ties” the virtual education to a static university.

LatinCampus has implemented mobile laboratories, whose purpose is to allow laboratories to be available to virtual students ¿what good would it do if there is e-learning and e-training and no equipment for training or if the equipment-trainer is static?



The mobile laboratory takes real practice to a virtual student

The mobile laboratories have web servers incorporated into the virtual campus, and where there is satellite communications it allows videoconferences to any province with e-teachers and e-tutors, thus providing administration to the e-institution.



The tents are converted into virtual classrooms

The tents (up to three) which are incorporated into the mobile laboratory have the function to convert themselves into classrooms for all type of work within the field of study; practices, videoconference classroom, regular classroom, administrative offices and in some cases there are benefits to its students like psychological and medical services.

1.6. The pedagogical e-clecticism

The content cannot be converted into e-content with the only use of methodologies and strategies specific of the digital environments and with the use of media to integrate virtual communities.

The main difference between the content that generates information and an e-content that generates formation are in the use of pedagogical models implemented. However the environment is so dynamic that you cannot talk about a single pedagogical model, is necessary to have a portfolio of several models and adapt them to the virtual environment.

LatinCampus has elaborated an implementation theory of some pedagogical models with the virtual education. First we have redefined and regroup four (4) main areas so that the model can be a part of the globalization process and the cybersociety.

The pedagogical theory: The theory.

The pedagogical practice: The strategy to create the didactical environment to teach the pedagogical theory

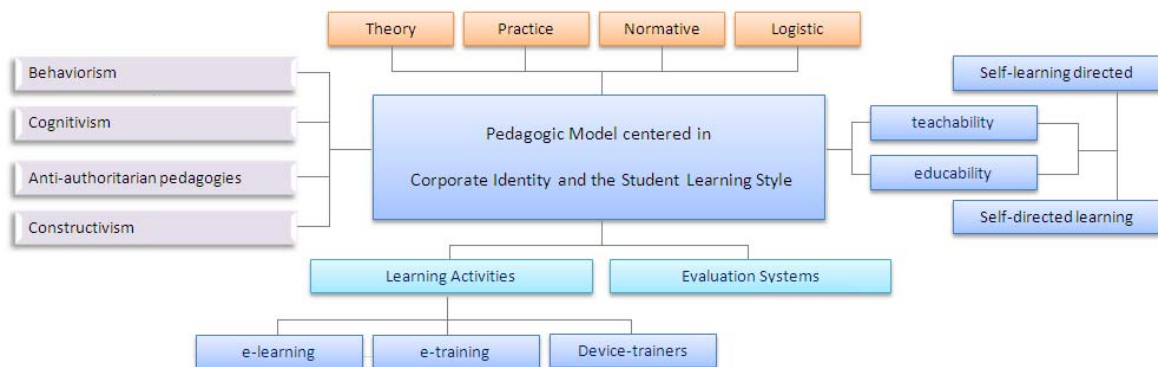
The educational system: Regulation and accreditation in the quality of the pedagogical practice.

The educational apparatus: Scenarios for the implementation of the theory and the pedagogical practice.

As a second step we have adapted the context of globalization and the cybersociety into four pedagogical models that are traditional to the presence of the students;

The behaviorism
 The cognitivism
 The antiauthoritarian pedagogical models
 The constructivism

In our referential and theory framework, LatinCampus constructed the pedagogical e-clecticism model that propend to adjust all learning activities and the evaluation system to particular styles of learning and the system of evaluating the particularities of each learning style and the social and cultural context of the student.



LatinCampus does not consider that the virtual process of teaching-learning should be concentrated on the student it must be first understood using a pedagogical model that us being used by the Institutional Corporate Identity ¿Can a teacher from MIT offer a class that goes against the American government?

1.7. The didactical e-constructivism.

A pedagogical theory like the e-electicism that is oriented towards global contexts and the cybersociety, it requires a pedagogical practice in specific context.

To build the e-constructionism, LatinCampus was based on the constructionism (of Seymour Papert), We defined the didactical learning activities that are based on theory in the e-clecticism and from there supported into two concepts; the e-training and the equipment-trainers help build the didactical objectivity of the e-constructivism.

In consequence the e-constructivism is based on two components; the digital simulation (safe and secure practice) and the interaction with the equipment-trainers (real practice).

The e-constructivism supports itself in the concept of remote assisted interaction. This assistance uses a conventional technology; the videoconference, but uses its own instructional design that we have used throughout time; e-ID.

The e-ID is an instructional model design that does not operate to generate content (e-learning or e-training) but exclusively to develop processes in the learning capabilities based on equipment-trainer (dynamic ideography scenario).

There are six (6) processes that cover the e-ID;

- Evaluate the theory fundamentals of each activity (e-learning).
- Interiorizing the activity guide.
- Develop a safe and secure practice (e-training).
- Develop the activities with the equipment-trainer.
- Assisted self-evaluation with the e-tutors.
- Present the institutional Evaluation.

Depending on the activity to realize, some processes can be adjusted. As a minimum we require for e-teachers and e-tutors to be present in at least two (2) processes so that the activity can be accounted onto significant learning in the program.

- Interiorize the guide of each activity
- Develop the activity with the equipment-trainer

LatinCampus has a series of discrepancies with the American as well as the European instructional design model due to the idiosyncrasy in Latin-American education hence these models promote the self-directed approach and in our culture we must promote the self-learning.

1.8. The e-Content

LatinCampus in its day to day task as the Corporate University has designed and generated e-content to develop strategic alliances and to offer a new curriculums such as the following;

Technology Specialization in virtual education.
Technology Specialization in security and surveillance.
Masters in virtual education.
Masters in intelligent building technology.
Doctorate in Educatronics.

The development of these academic programs has positioned the Corporate University in the world and at its own risk has launched curricular activities for superior education institutions.

1.9. Alliances (over other countries, defeating frontiers)

LatinCampus has presence in over seventy (70) Universities in eleven (11) Latin-American countries;

Central-America: Panama, El Salvador, Guatemala, Costa Rica, Nicaragua and Honduras.
Andean group: Colombia, Ecuador, Venezuela, Peru and Bolivia.

For the development of equipment-trainer LatinCampus has signed agreements with Asian knowledge industries: Korea, Taiwan, Hong Kong and Singapore.

In the period between 2010 and 2012 LatinCampus plans to develop strategic alliances with Spanish and Italian firms to develop equipment-trainers in cybernetic and integration.

Until 31 December 2009, LatinCampus has built four (4) mobile laboratories:

- Mobile telecomunicaciones (1)
- Fishing industry (2)
- Biotechnology (1)

We have currently in the design of two (2) mobile laboratories for the Colombian military armed forces.

2. Case study, Implementations.

2.1. Case study: University Corporate Alliance – Latin-American Universities.

A master's degree in virtual education (MVE) is an e-content that is intellectual property of LatinCampus that was developed between 2001 and 2004. The degree can be achieved by completing four (4) large units, that are fragmented in eighteen (18) modules and a Project that must be handed over before the graduation. The MVE can be done between eighteen (18) and twenty-four (24) months.

As Corporate University, LatinCampus signed a Strategic Alliance with the Dr. Jose Matias Delgado University (UJMD) from El Salvador. The UJMD made official the MVE before governmental authorities (ministry of education) so that the program was accredited before such entity. At the same time, the UJMD (Dr. Jose Matias Delgado University) has realized several strategic alliances in Central America, for example: Universidad Latina de Panamá (ULAT) with the objective to offer the same agreement with dual diplomas under the same program (UJMD-ULAT and others).

Following the same pattern we can assure that the developed e-content by a Corporate University has a qualified registry (governmental authorization) and is being offered by Central American Universities.

The advantages for the universities are several; however we would like to mention a few:

- The university did not do any financial backing for the e-content of the program.
- The university can use the latest platform (LMS/LCMS) and did not have to invest in its purchase
- The university has international e-tutors that are highly trained with vast experience in their area of expertise

The experience of the MEV will be replicated by 2010 in the Andean group (Colombia, Ecuador, Peru, Bolivia and Venezuela) from the Chimborazo polytechnic school.

The responsibilities of the regional strategic alliance are:

- Presents the program before governmental authorities.
- Perform inscriptions and registrations.
- Perform a permanent audit to LatinCampus.
- Participate in the theme/subject update.
- Deliver all certificates and titles.

The LatinCampus responsibilities are:

- Deliver the e-content, the e-learning, and make available equipment-trainer.
- deliver the virtual Campus Virtual (technological platforms).
- Make available e-tutors and e-monitors.
- Daily report of student advancement.

Shared responsibilities

- Validate the pedagogical implementation, methodology and didactical input.
- Revision of contents and strategies.

References of regional strategic allies

Central-America

Dr. José Matías Delgado University
El Salvador
Lic. Ana Ligia Rodríguez
Director of Virtual Education
URL: www.ujmd.edu.sv
E-mail: alrodriguez@ujmd.edu.sv
Cell phone: (503) 7854 1025

Andean group

Chimborazo Polytechnic school
Ecuador
Eng. Eduardo Villa Villa
Director of Virtual Education
URL: www.esPOCH.edu.ec
E-mail: evilla@esPOCH.edu.ec
Cell phone: (593) 084255222

The same MEV system applies to all e-Content of LatinCampus.

2.2. Case study: EV= e-learning + e-training + equipment-trainer

Our most concrete case that included the three components of the virtual education included in the “Technology Laboratories” which implemented ALL the services in the official schools in the states of Huila and Casanare in Colombia.

The “technology laboratories” integrate four different subjects: 1. Renewable energy 2. Electronics 3. Robotics and 4. Biotechnology. To each one of the laboratories we had to develop the e-learning, e-training and the equipment-trainers.



Educational Robotics Practice
Using e-training



Teachers educating themselves



Trainers in the states of Huila and
Casanare in Colombia.

References as a Strategic Allied in the Government

Country: Colombia
States: Huila and Casanare
Educational Secretaries: Huila and Casanare Governor's office
Responsible for the implementation: Eng. Iván Eduardo Restrepo
Cell phone: +57 310 253 7099

2.3. Case study: Colombian armed forces / Mobile telecommunications Laboratories

Given the mobility required for the officers in the Colombian military armed forces, and the need of decentralized training, the only solution that has worked throughout time and space has been the implementation of mobile laboratories.



Students of virtual programs attending to practice in the mobile laboratory in a military base

References from the military

Country: Colombia

Company: Colombian armed forces - army

Responsible: Colonel John Restrepo

Position: Education and doctrine chief for the Colombian armed forces

URL: www.emsub.net

Telephone: +57 310 253 7099

3. Conclusion.

LatinCampus supports Latin-American universities in the development and implementation of virtual education which is pertinent to our educational idiosyncrasy, with this in mind, we are prepared to do strategic alliances with universities in developed countries.

A very important note: LatinCampus does not sale, rent or license LMS / LCMS platforms. We realize that we have the only platform in the world that has implemented artificial intelligence, virtual educational and robotics agents.

Kind regards from Bogotá, Colombia.