Virtual Universities:
Issues, Concepts, Trends

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ABSTRACT

In this paper, author tries to draw basic directions of the virtual university study. These basic directions grasp virtual university's issues, concepts and trends in general, model, definition and basic characteristics of virtual universities in particular. Author goes on giving some educational and financial features of future higher education. It is discussed that virtual universities and distance learning have some lacks at the current stage that to be paid attention in the future. The paper is concluded with some recommendations for the future designers of virtual universities and distance learning programs.

INTRODUCTION

Numerous papers, books, seminars workshops and conferences are dedicated to the introduction and study of virtual universities (VU). However, there is still lacking a profound concept and overall view of VU and its related issues and aspects. This paper is a starting work to develop a profound theory of VU, where all related issues and aspects are classified, defined, and studied.

"Virtual University": What is the Meaning of "Virtual"?

Recently many universities have started projects, written papers and organized meetings and workshops dealing with the development of "virtual university". Analyzing what is really done or meant with this you may find the following activities:

- Courses and study programs are put on the Internet so that students from all around the world will have access to these courses or programs.
- Sometimes there is tuition on the net (newsgroups, chat, email), sometimes it is not.
- Lectures are sent from one university to another one to offer these at the same time to students at different places.
- Several universities offer selected courses for continuous education on the net for free choice and combination.
- All university services and functions (as administration, library, social life, meetings with staff and lecturers, cafes and so on) are simulated on the Internet so that no physical interaction will be needed any more to complete a study program.
- A central institution offers combinations of study programs or courses from different universities to create ones own curriculum (**broker institution**).

The following is challenge to higher education: Evolving from an Industrial Age University to an Information Age University – from bricks based university to electronic components based university – from walls surrounded university to wires surrounded university – from human professors to digital professors – from hard books to electronic books...

The Information Age and the ICT developments provided an opportunity for new levels of multi-institutional, multistate, and multinational collaboration to provide postsecondary education and training through existing and emerging global networks. Collaborating institutions can deliver modules, courses, and degrees to individuals and groups of learners who interact with faculty and with organized learning materials, in both real-time and delayed-time (asynchronous) modes. This enriched educational environment envisioned by many academic leaders is captured in the phrase "the virtual university" (Twigg & Oblinger, 1996).

Why VU?

Sustainable development is a key to competitiveness in the information age. Large corporations have begun to understand this, and

have built a growing body of experience in this field.

Modern information technology is now opening new possibilities. The Internet allows learning to reach any person anywhere at any time, opens for group learning and sharing of experiences, and opens the access to a rich body of timely learning material in a way that is unparalleled in man's history. The change the knowledge acquisitions process from teaching to active learning and from classroom learning to learning on demand.

This paper is designed as three sections each dedicated to one of three key directions of the virtual university study. The first section focuses on the virtual university issues (problems, obstacles, lacks). The second section covers basic definitions, concepts and ideas behind a virtual university. The third and final section is dedicated to current trends of virtual universities from educational and technical perspectives. The conclusion summarizes results of this paper and indicates future research related to the topic.

ISSUES

Lets start this section from a healthy skepticism. Doing this, the author cites the following question from (Gladieux & Swail, 1999):

Will management pundit Peter Drucker's prediction that the residential university will cease to exist within 30 years come true? Will "virtual instruction" replace face-to-face lectures, office hours, and review sessions? How will the expanding, interactive computer networks of today change the global market for higher education? And more importantly, will the new technologies expand opportunities for those who have been traditionally underrepresented in higher education or deepen the divide between the educational haves and have-nots?

Answers to these questions depends on how the idea of "Virtual University" is implemented, how "Virtual Instruction" takes place and what will be the range of an average virtual university. Most of virtual universities are limited to the boundary of its own state or country. Many virtual universities, at the present stage, serve only limited population, which makes unfair to state that they have reached the basic goal *"learning anytime and from anyplace"*.

So far, Very little is done towards recognition of degrees awarded through virtual universities.

Very little is known about the number of students and employers who make use of online course offerings. However, individuals who are poor, minority, and whose parents are less educated have less access to the Internet either at home or at school; thus, disparity between those who can benefit from virtual education and training and those who cannot is created. In addition to having limited experience with technology, traditionally underrepresented students may benefit more from the traditional delivery systems than the virtual campus (Gladieux & Swail, 1999).

As of yet, no one is regulating the quality and relative utility of each of these providers, and as such, whether or not virtual education and training truly "levels the playing field" is yet to be determined.

Another serious issue is social, cultural and psychological aspects. How to prevent that distance learning will not cause further isolation of human being from the society. Just recall your college years spent at traditional university environment and remember how much you have benefited from attending courses along with other fellow students, how much you have learned about various cultures, people and countries studying along with other fellow students from different countries. How you mastered teamwork doing joint assignments and projects.

Though, it should be also understandable that virtual universities are demands of the time. It is dictated by tremendous demand for facilities and possibilities for adults to participate in ever lasting education without disrupting from industry.

The best thing in this respect is to take advantage of both traditional and virtual universities. So, the above statement by Peter Drucker could be interpreted as that traditional universities have to undergo serious changes to meet the requirements of our time. It means to mix traditional education system with virtual one. Here, probably, it is necessary to distinguish between continuing/distance education for adults, and college education for young students. At this stage, virtual universities are more directed towards adult population rather than young college year students.

Despite healthy skepticism stated at the beginning of this section, there are very promising results created by virtual universities and distance learning in this short period.

Some experiments which directly compare web based learning with traditional institution have been conducted within academic settings in recent years. These experiments consistently indicate that students can learn via the web just as effectively, or in some cases more effectively, than those in traditional classroom (Hall, 1999).

Distance learning has gotten a bad rap. "The perception of the public is that online courses are easier (E-learning).

Ed Klonoski, Executive Director of the Connecticut Distance Learning Consortium, concurs with Gunn. "The public does not understand distance education. What does distance learning mean? The Net is like a giant elephant. Everyone touches one part of it. Some use e-mail. Some use other delivery forms." As in the parable of the blind men and the elephant, people promulgate opinions concerning elearning and whether or not it ought to be trusted based on the isolated part of the beast that they have touched.

CONCEPTS

If, just few years ago, VU was discussed as an idea, now it is a reality. Today there exists hundreds of VU in almost all contents, every state of the USA, and many European countries.

An important role in the success and growth of VU plays technology. It is technology that makes it possible for distance learning

Figure 1: A model and components of virtual university
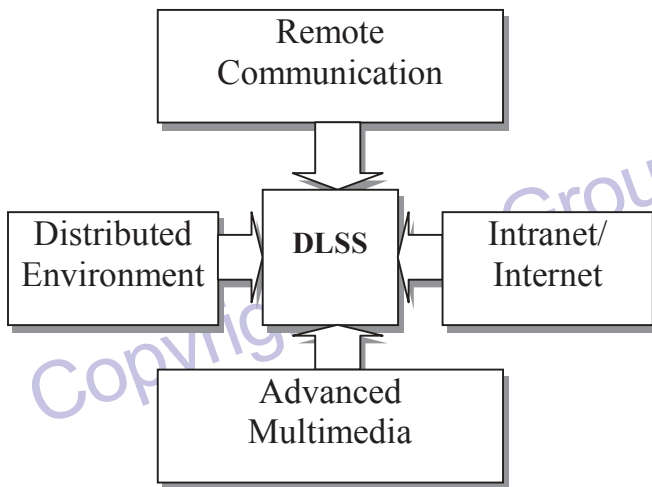
university to be successful, just-in-time and up-to-date. Some of these technological components are graphically represented in Figure 1. These components are most important aspects of Distance Learning Support System (DLSS).

The VU system is designed for working adults who cannot afford the time away from jobs and families, people who want to study in the USA from their home country Africa, or in Europe for their home country in Asia. Finally, this system is designed for those who want to make education their lifelong learning business. What is more, this system is designed to transform your life experience into academic credits and achieve your goal faster, easier, and better. In a word, the VU idea is to bring university to students instead of bringing students to universities, to adapt the university to students instead of adapting students to the university. To use the power of modern information technologies to dramatically increase access to global educational resources throughout the World.

Online learning gives you the flexibility to meet your education goals at your convenience - *anyplace*, *anytime*! All you need is access to a computer and the Internet, and you're ready to take advantage of the many online programs and courses offered by best colleges and universities and other providers.

Types of VU
- Granting a Degree
- Mediating for a degree/ serving as a web-based clearinghouse for courses and degrees offered by member institutions.

Basic Concepts
Listed below are primary considerations for any institution desiring to become information age (Childs):

Customized education where each individual receives basics then tailors the educational experience to meet their own needs and learning style.

Just-in-time education where knowledge is sought at a time and location relevant to the learner's need. Facilitated learning options where the teacher structures the learning environment/resources/activities.

Learning organizations where new, timely information constantly forces the reevaluation and restructuring of processes, fundamental beliefs, and data bases.

Collaborative efforts where individuals interact in such forums as town meetings or virtual conferences.

Connectivity where individuals have open access to a variety of information and data bases (LAN's, WAN's, internets, extract) as well as experts and other students.

The following are most important opportunities that a VU provide:

Variety of programs/extensive curricula/Great choice. You don't need to wait next semester for the desired course. You are not forced to get the required amount of credits within the curricula of one university. You are free to choose the cheapest courses, from the favorite colleges and professors.

Usually, virtual universities consist of numerous member institutions, in which case they serve as clearinghouse for courses and programs. When you enroll in one of these programs, you can select courses offered by any of the participating universities. For example, just for the sake of comparison, here we look at some facts of Virtual Universities.

The California Virtual Campus (http://www.cvc.edu) has 131 Schools, 3692 Courses, and 170 Programs.

Canadian Virtual University (http://www.cvu-uvc.ca/english.html) comprising 13 universities offers 2000 courses to choose from, and the list is growing.

New Jersey Virtual University NJVU (http://www.njvu.org) provides an easy-to-use index to over 1,300 credit and noncredit distance learning courses offered by 42 of the state's public and independent higher education institutions.

Virtual University (http://www.vu.org) claims to be the world's largest online learning community, serving half a million students and

alumni in 128 countries. VU Web Manager Richard Dean says, "Nearly 60 percent of our students at Virtual University are in the 40-59 age bracket, and this is by far our largest audience."

No one single traditional university can afford such a great opportunity, variety of program, and extensive curricula including the world largest universities.

You may complete your degree from anywhere in the world. Here's what to expect as a student at a VU:

Program Convenience - Earn your master's or doctoral degree from the convenience of your home or workplace. The WIDU degree programs make it easy for you to further educational goals and professional objectives.

Rigorous, Flexible Curricula - Guide your own course of study with the help of the faculty mentors. Relate research to your personal interest and design projects that satisfy curriculum requirements and your professional objectives.

Personalized Support - Expect regular and frequent one-on-one interaction with faculty mentors, who provide mentorship and collegial guidance.

Strong Faculty Mentors - Carefully recruited scholars, highly skilled academicians and working professionals, our faculty members bring strong credentials and practical experience to the development of each student.

Global learning community. A good distance learning program should adhere to the same academic standards as the institution's traditional courses and programs. The institution should provide students with complete information regarding: the course and degree requirements, the nature of faculty/student interaction, assumptions about technological competence and skills, technical equipment requirements, and any difference between on-campus and distance learning tuition and fee charges.

Students should also expect equivalent access to academic and administrative support services, such as library and learning resources, advisement and counseling, registration, financial aid resources, and other appropriate services.

Distance learning offerings that provide for discussion groups and other opportunities for participants to share ideas and learn from each other further enrich the academic experience, as does timely interaction with faculty. In most cases, distance education is learner-centered, with faculty functioning as a facilitator or moderator rather than a lecturer. It is a mistake, however, to think that distance learning will be easier than learning in conventional classes; you may find it requires more work, and it certainly requires self-discipline.

Delivery Methods/Modes, Means, Technology

The courses and programs in virtual universities are offered using various means of technology. In some cases, courses are provided on line, requiring access to a computer with a modem. Others may need a VCR, access to an interactive classroom, or other technology. The following are most used terms for delivery methods/modes.

Audio Tapes. Taking a class by listening to all or part of it on your tape cassette machine.

Video Tapes. Taking a class by listening to all or part of it on your VCR player.

CD/Multimedia. A class, some or all of whose content, is stored on a CD ROM disk. This content can contain text, sound, video, graphics, animations and files to be downloaded (which means to receive a file into your computer from a remote computer and store it there).

Interactive TV. A class where you are seated in a specially-equipped room where you can see, hear and converse back and forth with your professor and fellow classmates who may be located in one or more similarly-equipped rooms no where near yours.

TV/Cable TV/Public TV/Satellite TV. Taking a class by watching all or part of it on your television set.

Correspondence Mail. Taking a class some or all of whose content and discussions between you and your professor are carried on via printed communications which are largely exchanged through surface mail.

E-mail. Taking a class by communicating in part or entirely by using electronic mail or messages sent from one person, such as your professor, to another via computer networks.

Internet/Web. Taking a class where you will be asked to find information on numerous topics including, for example, your course curriculum, course content and course notes by visiting designated websites.

PC-Based Interactive. Taking a class, which involves your taking part in computer-based electronic discussions and dialogs among yourself, your professor and your classmates.

TRENDS

In (Creanor, *et al.*, 1996) authors introduce Clyde Virtual University, as Europe's first virtual university. Although this article is focused on this particular university, however some results and conclusions can be extended to any VU. For example, in this work authors defines VU trends in two aspects – educational and technical trends having a profound influence on higher.

Educational Trends
- Increasing student numbers
- Wider diversity of student backgrounds
- Reaching out to the wider community - lifelong learning
- Tighter funding
- Movement towards a standard curriculum

Technical Trends
- Increased bandwidth
- Massive increase in the use of the Internet
- The development of 'virtual' libraries, laboratories and campuses.

Some other important trend in the development of virtual universities are as follows, however, due to limited space and scope of the paper, they are just listed without detailed description.

Changing demographics. The changing demographics of higher education are placing new demands on institutions. Million working adults are currently enrolled part-time in American and European colleges and universities.

Increasing demand. Current studies show an incredible growth in older and employed students seeking skills enhancement and continuing education, and the numbers go much higher each month and year.

Knowledge explosion. The world's volume of new information is increasing at such a rapid pace that a class of this year will be exposed to more new data in a year than their grandparents encountered in a lifetime. Knowledge doubles every seven years.

Globalization. Globalization of the world's economies is leading to increased emphasis on internationalization of the curriculum.

Productivity. With declining budgets and increasing enrollments in higher education, there is a continuing push to find ways to get more scholars for the Dollar/Euro. Demands for greater productivity in higher education continue to be heard with greater frequency than anytime in the past.

New definitions of quality. Students expect to participate in a learning environment that fosters measurable improvement in their skill development not just during college but also throughout their careers. Students are increasingly selecting curricula that enhance their chances of both initial and sustained employment.

A more competitive environment. Students are using their purchasing power to be more selective about which institutions they attend. Colleges challenge each other's strategic positions for funds and students.

Future & Financing of VU

Greater competition in the learning marketplace has the potential to benefit learners by offering more choices, more delivery options, lower costs, and increased flexibility.

In the debate over the changes higher education must make to respond to the needs of 21st-century learners, two distinct viewpoints

dominate. One view is that the role of the university should not be lost in an effort to compete with nontraditional providers such as training institutes. Advocates argue there is more to education than learning specific job-related skills. For instance, students may not know what they want or need, and the traditional institution provides guidance, structure, and organization. More importantly, students may not enough appreciate the college atmosphere, where by meeting other students, doing joint works, conducting team projects, they can develop themselves in the since of sociability, team spirit, ability to work with different people and in different environment.

The following are some features of future higher education:

Most students are not seeking degrees. Instead, modularization enables them to meet their particular learning needs, often tied to job or career goals.

Curricular materials are outcome oriented. Some outcomes relate to the **goals of a liberal arts education;** others are defined more along the lines of **skills.**

The faculty role has changed. As a greater amount of codified knowledge is captured in courseware, the role of the faculty member is increasingly that of mentor or leader in the learning process.

Faculty labor is applied at times and in circumstances when it is needed—**that is, on-demand**—rather than on a fixed schedule such as the three-lectures-per-week model (Massy**,** 1997).

The **economics of supply and demand** in the new competitive environment keep the **costs of basic courses and programs low.**

Unique offerings garner higher incomes for their providers.

In addition to faculty salaries, **institutional resources are expended on course materials, instructional technologies, and academic support.** Some or all of those may be **purchased** from other higher education institutions and from private providers. The proportion of the budget allocated to faculty salaries is declining.

The move away from site-based educational delivery has required **different kinds of capital investments** for infrastructure.

Educational **funding now follows the learner** rather than the institution.

Because employers have continued to reduce their numbers of core, benefited employees in favor of part-time workers or contracted/outsourced services, most students pay directly for the education they need.

Because more students are in the workforce than in the initial college-going population, more **students pay directly** for the education they need.

Public institutions **no longer receive a substantial amount of state funding.** Revenue sources include tuition, contracts with employers and other agencies of state government for training, sale of courses and courseware to other institutions, and low-interest st**a**te loans.

CONCLUSION

From the study in this paper the first important conclusion that can be derived is distance learning will not replace the traditional classroom setting, but it provides extraordinary opportunities for students, particularly those constrained by time or location.

Concerning quality programs, the programs should include a number of the same elements contained in a traditional university: technical support, individualized attention to students, mentoring, and faculty-student exchanges.

Based on the view of various authors and experts, the following recommendation could be handful for the designers of future virtual university systems, curricula and programs, makers and providers of technology, and public policymakers: make access a central concern, keep the allure of technology in perspective, and learn from past ventures in distance education. Try to keep traditional universities open for those who will prefer to get their degrees in the traditional environment enjoying studying along other fellow students.

As future work, the author is planning to capture the mentioned issues and aspects in separate and in detail. Each of the mentioned issues is a topic for a profound research.

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