

EDULEARN¹⁴

**6TH INTERNATIONAL CONFERENCE
ON EDUCATION AND NEW LEARNING
TECHNOLOGIES**

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CONFERENCE PROCEEDINGS



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Dear EDULEARN14 participants,

It is truly a pleasure to welcome you all to EDULEARN14.

Today, we have the privilege of bringing together participants from more than 80 different countries. This will provide a platform for you to network with other colleagues and learn from diverse views in the field of education and e-learning. In one single place, you will be able to listen to delegates from all over the world, establish new partnerships and present your projects in a multicultural atmosphere.

During this conference, many different educational topics will be addressed by international experts. We encourage you to get the most out of this occasion and to discover some of the latest educational innovations that will be presented in the conference sessions.

Also, make sure to take some time to discover the wonderful city of Barcelona, its cultural offer, sandy beaches and local gastronomy. Without doubt, Barcelona will be the best complement to your conference experience.

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CONFERENCE SESSIONS

ORAL SESSIONS, 7th July 2014.

Learning Management Systems (LMS)
Open Educational Resources
Meet the Keynote
m-Learning Technologies for Education
Intercultural Issues in International Cooperation
Experiences in Primary and Secondary Education
Language Learning Innovations (1)
Diversity Issues

Intelligent Tutoring Systems (ITS)
Educational Software (1)
Pre-service and In-service Teacher Experiences (1)
Videos for Learning
University-Industry Cooperation
Emerging Technologies in Primary and Secondary Education (1)
Language Learning Technology (1)
Links between Education and Research

Technology-Enhanced Learning (1)
MOOCs: Massive Open Online Courses (1)
Pre-service and In-service Teacher Experiences (2)
e-Learning Projects and Experiences (1)
Training Educational Staff
STEM Experiences in Primary and Secondary Education
Language Learning Technology (2)
Experiences in Engineering Education (1)

Technology-Enhanced Learning (2)
MOOCs: Massive Open Online Courses (2)
Evaluation & Assessment of Student Learning
Learning Experiences in Higher and Further Education
Collaborative and Problem-based Learning
Experiences in Special Education
Language Learning Innovations (2)
Experiences in Engineering Education (2)

POSTER SESSIONS, 7th July 2014.

Learning Experiences in Education

Technology in Education and Educational Software

ORAL SESSIONS, 8th July 2014.

Emerging Technologies in STEM education
Educational Software (2)
Virtual Learning Environments (VLEs)
Web 2.0 and Social Networking (1)
International Cooperation Experiences
Experiences in Health & Life Sc. Education (1)
Innovations in Foreign Language Education
Pedagogical Innovations and Teaching Practices

Emerging Technologies in Education
Educational Multimedia and Hypermedia
e-Assessment
Web 2.0 and Social Networking (2)
Entrepreneurship and Employability Education
Experiences in Health & Life Sc. Education (2)
Language Learning Technology (3)
Pedagogical Innovations in Business & Management

Mobile and Tablet Technologies (1)
Game-based Learning
Online Assessment
Flipped Classroom
Curriculum Design and Development
Pedagogical and Technological Innovations in Education
Language Learning in Primary and Secondary Education
Experiences in Business & Management Education

Mobile and Tablet Technologies (2)
e-Learning Projects and Experiences (2)
Quality Assurance and Assessment of Student Learning
Distance Learning
Experiences in Research
Pedagogical Innovations in Learning and Teaching Methodologies
Emerging Technologies in Primary and Secondary Education (2)
Educational Management

Technology-Enhanced Learning (3)
e-Learning Projects and Experiences (3)
Quality Assurance / Standards and Accreditation
Enhancing the Learning Experience
STEM Education
Experiences in Education
Learning Experiences in Primary and Secondary Education
Global, Social and Legal Issues in Education

POSTER SESSIONS, 8th July 2014.

Pedagogical Innovations and Experiences

New Challenges in Education and Research

VIRTUAL SESSIONS

Academic Research Projects
Barriers to Learning and Diversity Issues
Blended and Distance Learning
Career Development and Training
Computer Supported Collaborative Work
Curriculum Design and Development
E-content Management and Development
e-Learning Projects and Experiences
Education, Development and Globalization
Educational Management
Educational Software & Serious Games
Educational Trends and Best Practice Contributions
Emerging Technologies in Education
Enhancing Learning and the Undergraduate Experience
Evaluation and Assessment of Student Learning
Experiences in Research
International Projects
Learning and Teaching Methodologies
Learning Experiences in Higher and Further Education
Learning Experiences in Primary and Secondary Education
Links between Education and Research
New Learning/Teaching Models
Pedagogical Innovations in Education
Pre-service and In-service Teacher Experiences
Quality Assurance/Standards and Accreditation
Special Education
Student Support in Education
Technology-Enhanced Learning
The Bologna Declaration and ECTS Experiences

Alliances for Knowledge: MOOCs for a New Model of University (Negative and Positive Aspects)

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Abstract—A generational clash of enormous scope is emerging within our institutions; the criticisms to the university advanced 15 years ago were "waiting ideas": waiting for the new Web and for a new generation of students able to effectively put in question the old model of University. University in the globalized and interconnected knowledge society reached a turning point; we are at a crossroads between stagnation and renewal, between atrophy and renaissance. Many universities around the world fail to meet the learning needs; the majority of undergraduate courses churn skills that are not required by the labor market, more and more American students put into question quality, costs and more and more students around the world enroll in online university courses or distance universities. At present, however a new concept of global education is emerging; many universities are tearing down their ivory towers and are internet to make their content available to everyone. MOOCs have many shortcomings that depend on the pedagogical-educational models and on their course assessment systems as well as on the access modes and on the business models universities are developing. Today we have to make a critical appreciation of MOOCs in order to put them into the proper historical and cultural setting; all MOOCs contents should be considered as new encyclopedias democratizing the access to knowledge; without a new supporting framework, without a new organizational and pedagogical framework, we cannot think to replace university as such. The sharing of contents among the various universities worldwide certainly represents a significant step forward towards renewal, however a true change of the universities can happen mainly with the establishment of consortia among the various universities of the world cooperating to jointly realized the contents of the Internet-based learning environments. In a networked world, the students can learn from experts of the whole world and can contribute, through a collaborative learning process, to the realization of new knowledge The article will present the successful model of distance university coming from the UNINETTUNO Model, born from consortia of universities of Italian and international traditional public university.

Index Terms— Distance education, distance university, e-Learning, MOOCs.

I. INTRODUCTION

A generational clash of enormous scope is emerging within our institutions; the criticisms to the university advanced 15 years ago were "waiting ideas": waiting for the new Web and for a new generation of students able to

effectively put in question the old model of university. University in the globalized and interconnected knowledge society reached a turning point; we are at a crossroads between stagnation and renewal, between atrophy and renaissance. Mark Taylor, of Columbia University, raised an harsh academic debate, publishing on the 26th April 2009, on the New York Times, a provocative article whose title was: "End the University as We Know It". "*Graduate education – as his article started - is the Detroit of higher learning. Most graduate programs in American universities produce a product for which there is no market (candidates for teaching positions that do not exist) and develop skills for which there is diminishing demand (research in subfields within subfields and publication in journals read by no one other than a few like-minded colleagues), all at a rapidly rising cost (sometimes well over \$100,000 in student loans)*". In other areas of the world the access to the university is almost impossible. Finally, even those who succeed in having a quality higher education are not always rewarded by the employment market and unemployment among graduates is a situation involving many European countries; however, also in the United State, only a little more than fifty percent of the newly graduates, relying on a higher education background, actually work in positions requiring that level of qualification. This is, of course, does not apply to those students who take a degree in the best universities; but, for many others, the time and efforts spent are not valued.

II. A REAL CHANGE FOR THE UNIVERSITY

Today the transformation of the University is no longer only an option, but an imperative. Internet has, by now, evolved into an ever-richer global platform, actually becoming the prevailing infrastructure for exchanging knowledge among people. The generations of younger students, the digital natives, will no longer do without using the Web to develop knowledge and skills. The transformation of the University is an unavoidable need in this new situation. In the age of global change it is impossible to continue to use knowledge communication models that keep on being linked to a model of university that goes on carrying on its functions with face-to-face academic lectures leaving small space for interacting with the students. Today, it would seem absurd to see, on the highways connecting various countries, transports run by carriages and horses; likewise, the university should completely redesign itself, if it does not want to lose its role and functions in this new situation; it should modify

its old educational model and replace it with a new paradigm, based on collaborative learning; it should completely change its way of working as it regards the content creation; it should contribute to the creation new contents suited to an educational resource open platform accessible to all students worldwide with no time limits. The creation of a global network for higher education in which teachers and students from different places of the world participate in the collaborative construction of knowledge is not a utopia; indeed, it can be a solution to bring a new vitality to the universities by featuring them on the networked economy global. Unfortunately, this situation is still unreachable: *“In a world that is characterized by an unprecedented connectivity level, especially among nowadays young people, universities keep on working as islands, mostly autonomous, aimed at scholarship and learning, and, up to now, they did not succeeded in seizing the opportunity to take advantage of the Internet to destroy the walls separating institutions, lecturers and students. The 21st Century university should use the Web as an ecosystem that could offer an unrivalled experience to the students worldwide collecting, on the Internet, the best learning materials existing worldwide and allow their learners to choose a customized learning path relying on support of online teachers, some of which could also have a chair at a local university, whereas other ones could live on the other side of the world. In order to assure the functioning of this system universities will have to make deep structural changes”* (D. Tapscott and A. D. Williams 2010).

According to Charles Vest, president emeritus of M.I.T., this prospect is not as unreachable as it may seem: *“Thanks to an increasing movement in favor of open access for everybody, we are witnessing the first steps leading to the success of a “meta-university”: a transcending framework, that is accessible, dynamic and collaboratively built through “open” platforms and materials that can allow to structure or enrich most of higher education worldwide.”*

III. THE HIGHER EDUCATION GLOBAL NETWORK IS NOT A UTOPIA

The world of distance education is in a flurry. With an ever-wider availability of new technologies and of the Internet in particular, new distance teaching and learning models are developing in traditional universities. Up to now, in Europe above all, most of distance universities have been structures separated and parallel to the traditional ones, as the it is the case with the British, French, Spanish, German etc. open universities; whereas today, an hybridization process is underway. The continuous spreading of video lessons on the Internet, made freely available by the most renowned American and European universities, is changing distance university models. Today, distance and traditional universities often live together and an “intra-muros” and “extra-muros” educational space is concretely developing. New spaces of access to knowledge can be everywhere: on the Internet, on the Pc, on the iPhone or on the iPad anybody can access to knowledge with no limits of space and time. This situation highlights the fact that all face-to-face students will become, ever more rapidly, also distance students, since they will try to gather information in other places, apart from their own university.

IV. A REAL CHANGE FOR THE UNIVERSITY

The generations of new students, the digital natives, will no longer do without the use the network to develop knowledge and skills. The transformation of the University is really happening. The creation of a global network for higher education in which teachers and students from different parts of the world participate in the collaborative construction of knowledge is not a utopia, indeed it can be a solution to bring a new vitality to the University by featuring them on the networked economy global.

The University of the 21st Century should increasingly be characterized as a global network, an ecosystem, it should make deep structural changes and its future should result in different operating models:

1. Exchange of educational content: teachers publish their course materials available free on the Internet for everyone;
2. Co-creation of educational content. The collaboration between teachers of different universities of the world to jointly create contents for the Internet;
3. The Consortium for collaborative learning. The university should stop being a place to become an hub in a global network of teachers, students and institutions engaged in collaborative learning, without losing its own identity, its own campus and brands.

V. ALLIANCES FOR KNOWLEDGE: IS IT THE NEW RENAISSANCE OF THE UNIVERSITY?

At present, however, there are very interesting facts going on worldwide; in some prestigious American universities a new idea of global education is starting from the bottom; many universities are tearing down their ivory towers are using the most powerful platform in the history to make their contents available on the Web. Lately, in the main American universities and, recently also of Europe, some initiatives, such as the “Knowledge Alliances” and the MOOCs (Massive Open Online Courses), that offer online university courses including free-access video lessons, texts and practice work, are being developed. The main MOOCs presently available are: Coursera by Stanford University, edX by Harvard University and M.I.T. and Udacity and OpenupEd, the European initiative of the EADTU - European Association of Distance Teaching Universities.

Many people think that MOOCs are the future of higher education in America. In the past two years, Harvard and M.I.T., have together pledged tens of millions of dollars to MOOCs development. Many other élite institutions, from U.C. Berkeley to Princeton, have similarly climbed aboard. Their stated goal is democratic reach. Some lawmakers, meanwhile, see MOOCs as a solution to overcrowding; eleven schools in the California State University system moved to incorporate MOOCs into their curricula. In addition to having their own professors deliver their courses, they may use videos by teachers at schools such as M.I.T.

In the United States the main MOOCs are Coursera, edX and Udacity. Coursera, a Stanford spinoff, defines itself as a “social entrepreneurship” company operating in partnership with traditional universities to offer “open”

distance university education. In May 2014 it has 109 partners, mainly universities, but also cultural institutions such as the American Museum of Natural History. Its catalogue includes 657 courses (some of them only announced; they will start later in 2014); among these 564 are in English, 50 in Chinese, 23 in Spanish, 22 in French, 14 in Russian, arriving to only one in Arabic, one in Italian, one in Greek and one in Japanese. Enrolments amount to over 7,740,000 students.

edX is a non-profit organization and its founders are Harvard and M.I.T., with Berkeley that joined soon after. At May 2014, there are 34 Partner Universities (edX Charter Members, members of the xConsortium) – beside the founders, there are universities such as Hong Kong (both the University of Hong Kong and the Hong Kong University of Science and Technology), Indian (IIT Bombay), Korean (Seoul University), Japanese (Kyoto University) and European ones (for example, the Technische Universität München). Furthermore, there are other 12 "edX Members", from educational and technologies world. Its catalogue too grew very quickly: in May 2014 there are 179 courses; in December 2013 they were 102; in July 30 were listed, whereas in October 2012 there were 7. In July 2013 they reached one million enrolments; in last period they do not publish information on the number of enrolled students.

Udacity, instead, presents itself as for-profit company. Established by Sebastian Thrun, former professor at Stanford, Udacity too states that its mission is offer university education to a widest possible public. At present (May 2014), its catalogue includes 38 courses. Its most popular course (CS101 - Introduction to Programming) counts about 343,000 enrolled students.

Beyond the above-mentioned OpenUpEd, that will be described below in this paper, in the latter period European MOOC initiatives emerged, clearly modeled on the U.S.A. MOOC way.

Miriada X, promoted by Telefónica Learning Services and Universia, the main network of Spanish and Portuguese languages universities, states the aim to put at the disposal of 1,262 Ibero-American universities a space for sharing and publishing of free courses to reach the huge population of students of Spanish and Portuguese languages. Miriada X, launched only in 2013, counts 29 partner universities, offers 130 courses and has already enrolled more than 671,000 students.

FutureLearn is a private company wholly owned by The Open University; launched in 2013, its partners include over 20 of UK and international universities, as well as institutions with a huge archive of cultural and educational material, including the British Council, the British Library, and the British Museum, for a total of 29 partners. FutureLearn offers a catalogue of 32 courses, only 4 of them actually running; the remaining courses are scheduled to start from June to October 2014.

A. *Pedagogical and organizational features*

From a pedagogical perspective, the general model is similar for the three initiatives. Each course is structured upon several Didactic Units that, in turn, include:

- Video lessons, structured on sequences typically lasting from 5 to 15 minutes; the sequences are

separated from the other didactic sections mainly be finger exercises;

- Finger exercises, that is small tests, based on multiple-choice or on a semi-structured pattern, used to separate the sequences and fix into memory the concept learnt and/or put into practice the theoretical notions previously illustrated;
- Problem set / Homework: "Homework", concluding each didactic unit, include a set of problems/questions of higher complexity than finger exercises;
- Q&A / Forum and Wiki: asynchronous systems of exchange, discussion, collaborative construction, in some cases monitored (even if lightly) by a teacher or tutor.

The course model offered by the three MOOCs can be distinguished for some particular features. The video lessons can consist in filming traditional lessons in a classroom or in shooting the teacher's hand writing on an electronic blackboard while giving an explanation or, again, in an "informal" shooting paying no particular attention to set design.

In addition, their mid-term assessments are structured in a different way. Udacity and edX often use – mainly in the case of scientific and computer courses – of the auto-grader, software packages allowing automatized assessments of the work made by the students (and that can assess and give a feedback also on the code lines submitted by the individual student; edX implements, in some cases, virtual laboratories allowing the students to tests simulated tools or special Web-based applications, developed for the course itself (this is the case of the courses on Electronic Circuits or Chemistry). Coursera is mainly based on peer assessment, that is on the "blind" assessment of student colleagues through the tools made available on the platform.

The students who enroll are asked to subscribe a "honor code" whereby they state that they will make their exercises, homework and any final tests by themselves, that they will not use multiple accounts, that will not spread the solutions to their homework or final tests.

In addition, the three initiatives envisage a "paying" model, beside an "open and free" standard, for the students who wish to certify their success to the face-to-face final exam. Since the first starting months, Udacity cooperates with Pearson, a multinational company with thousands of branches for the "face-to-face" certification of the final exam and that signed several partnership agreements with traditional universities that make students take courses on Udacity and take their exams on campus (Georgia Tech, San Jose University, this last one "put in pause" their agreement with Udacity after a couple of semesters of testing).

Another model of "paying" certification of the face-to-face exam is followed also by Coursera and edX; the three initiatives now distinguish "free courses", "certified courses" and "certified paths" – groups of certified courses stating higher level skills.

B. *Critical questions*

Many are the doubts raised by the pedagogical and organizational aspects of these initiatives. First of all, in spite of the pedagogical justifications of the model of course delivery used, to which, for instance, Coursera

devotes as special page (<https://www.coursera.org/about/pedagogy>), the proposed video lessons do not appear to rely on an educational model and on robust theoretical bases. The enrolment form is simple and easy; it does not require the inclusion of information on one's own skill-level or specialization field. If this, from one hand, enhances the "conversion rate", that is the number of people who enroll in this specific portal, on the other hand, the system does not recognize anything about the user's specific skills and, as a consequence, it cannot suggest courses or study paths that are most suited to him. The direct consequence of this lack of a filter upon entry is the rate of give-ups, estimated at 90% and effectively represented by the diagram below (Fig. 1).

In short, the choice for a course is left completely to a click of the individual student enrolled in the platform that will be able to rely exclusively on his own instinct or, if available, on the few lines of "prerequisites" posted on the page of course presentation. In addition, the non-assessment of the skill-level on entry poses a question of lack of reliability of the peer assessment systems, as those used by Coursera: not being able to know the skill-level of the one that is assessing a paper, how can you believe that that assessment is actually reliable?

These remarks are emerging also on the international scene. Of course, MOOCs are collecting a quantitatively relevant amount of data both as it regards the single enrolled students (data that, by the way, represent one of the business models implemented for these initiatives, that could represent also an ethical problem), and, in terms of effectiveness of these initiatives, and, therefore, on the efficacy of the developed and proposed educational models. However, whereas the promoters of these initiatives tend to celebrate and endorse data about the number students enrolled in these initiatives and in single courses, they did not pause to assess how (little) effective these educational and organizational models turned to be since they entail give-up rates of 90%. These data will become useful, first of all, when they will be correctly processed and when, at last, they will be used to take critical decisions as it regards the proposed educational models.

VI. EUROPE AND THE MOOC'S MOVEMENT

The "OpenupEd" platform (www.openuped.eu) – the European answer to the U.S. initiative – was realized by the EADTU – European Association of Distance teaching Universities – and by its partners, not for standardizing models and approaches by producing short online courses, as it happens in the United States, but to value diversity. On OpenupEd, each European university presents its model of MOOCs and does not follow pre-established formats. E-Learning platforms where distance teaching and learning processes take place, are managed by the single universities and do not have "standardized" functionalities and courses are built and delivered according the specificities of the educational models of the single universities. In December 2013 the OpenupEd platform includes free massive courses in 11 languages respecting the culture and the teaching models of the various European countries. At present, 13 universities of 11 European countries, beside Israel, joined OpenupEd. All partners signed and share a paper on quality and are jointly realizing the first handbook on quality that is

specific for Massive Open and Online Courses. A scientific committee regularly assesses the quality of the MOOCs offer and decides upon the admission or not of the courses proposed by new partners. Taking into account the fact that OpenupEd accepts only universities that are legally recognized in their respective countries and accredited for the delivery of ECTS credits at the end of their study paths, almost all MOOCs available on OpenupEd give the users the possibility of obtaining university training courses further to periodical tests, active participation to the training paths and success on the exams. In the this portal, the only Italian institution that is participating is the International Telematic University UNINETTUNO having the highest number of courses among all participants: 120 courses, followed by the Spanish Universidad Nacional de Educación a Distancia (UNED), having 20 courses and by the British Open University, having 12 courses.

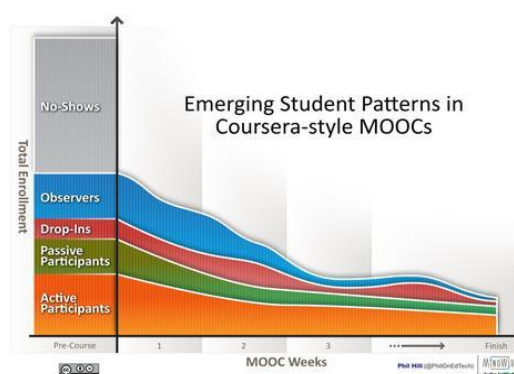


Figure 1. – MOOCs Give-up and Success Rate

A. Shortcomings of MOOCs educational models and assessment systems

There are many shortcomings in pedagogic-didactic models and in their course evaluation systems, and also in access requirements and in the business models that American universities are developing.

I am worried about some remarks made by Daphne Koller, one of the founders of Coursera, in videoconference on TED in August 2012, entitled: "What we are Learning from Online Education" when she states [2]: "Now, how do you grade the work of 100.000 students if you do not have 10.000 tutors? The answer is, you need to use technology to do it for you. And the solution we ended up using is peer grading". Through these assessment model, credits or certifications are awarded. In my opinion, without a true educational model and a true evaluation model it is impossible to deliver certificates stating the acquired skills.

There is still no certainty about who works behind the Pc and there are perplexities about the fact that one hundred thousand people who take an online course, and so many are those enrolled in some online courses, are left alone in interacting on contents, without the guidance of an expert teacher: the profile of the teacher cannot be replaced by the development of peer collaborative learning model. It is impossible to think that it is up to the students themselves to assess their own colleagues and the University to grant the fairness of their leaning without interventions targeted to individual students. In the

psycho-pedagogic model of distance teaching of the International Telematic University UNINETTUNO, designed after several years of research work, we can actually implement distance teaching and learning processes on the Internet that, sometimes are even better and more effective than those implemented in traditional universities; however, this should be done by applying accurate and already successfully tested scientific rules and theories; these students, instead, are divided, on the Web, in classes of 30 and for every 30 students there is a teacher-tutor of the subject who supports at distance their learning process and, at the end, organizes face-to-face exams. And again Koller, always in the 2012 TED Conference, states:

“Students also self-assembled, without any kind of intervention from us, into small study groups. Some of these were physical study groups along geographical constraints and met on a weekly basis to work through problem sets. There are some tremendous opportunities to be had from this kind of framework. Because the data that we can collect here is unique. You can collect every click, every homework submission, every forum post from tens of thousands of students. So you can turn the study of human learning from the hypothesis-driven mode to the data-driven mode, a transformation that, for example, has revolutionized biology. You can use these data to understand fundamental questions like, what are good learning strategies that are effective versus ones that are not? And in the context of particular courses, you can ask questions like, what are some of the misconceptions that are more common and how do we help students fix them?”

B. Video Lectures Pedagogical Model

I think that today we need to place free online video lectures into the proper historical and cultural setting; they should be considered as new encyclopaedias democratizing the access to knowledge and offering quality contents worldwide. This is certainly a greatly valuable element, however without a strong supporting system, without a new organizational and pedagogic framework we cannot think to replace university as such, as a real and virtual place where the experience and competence of the professor is transmitted to the students through continuous interaction models, an interaction between students and teachers, youths and adulthood, experts and non-experts enabling a critical development of knowledge and therefore, its transformation into knowledge.

USA MOOCs' videolessons model seems not to be based on a strong pedagogical framework; they propose video contents that range from basic recording of traditional classroom lectures to short units, "knowledge pills", more similar to an infotainment product rather than to an academic content.

Over twenty years of research on the use of video-lesson in distance teaching and learning processes, and specifically the study and further development of theories relating to communication, learning and memory, lead us to identify new patterns of communication in the design of a lesson that targets a "virtual" student, and to define styles and languages that help a teacher to trigger processes of critical and reflective learning. In designing the various models of video lessons is thus taken account

of some existing theories on the one-way communication, and in particular

- on written communication: oral communication as one-way video has many features in common with the written communication, so the video lecture design can be based on many of the principles relating to the production of a written text (Horowitz & Samuels, 1987);

- on the characteristics of the technology, in order to enrich the communication based on different media languages .

- on matters relating to reasoning and representation of the information (analog intermediate representations aimed at achieving specific objectives of the system), basing on mental models theories of Johnson-Laird (1983).

- on the role of memory, and on mind, understanding and learning processes, the research work was based on cognitivist and connectionist theories (Bower & Cirilo, 1985), (Norman, 1988), (Gagné, Briggs, 1974), (Ausubel, 1978), (Bloom, 1982), (Vygotsky, 1978) which describe the mental activity as composed by a succession of three different parts: the recognition of information, information processing, and storage in long term memory.

The online video lessons designed and realized with our model are developing a new pedagogic model, the "flipped classroom" model – a model in which the teacher pre-assigns any kind of required training material, such as video lessons and exercises, essays, bibliographies and spends the scheduled real time communication sessions in developing a student-teacher interaction model. This model is widely acceptable since it allows for interaction among teachers and students enabling traditional universities, physical and distance ones, to keep their role of special places where people cultivate the Life of the Mind.

C. Business model

Another point to think about is the freedom of access: these courses currently "open" courses could not be free any longer; the business value linked to these courses is getting apparent; American teachers are creating their own start-ups, the main companies, Coursera and Udacity, edX, have already started their own for-profit companies and are sharing profitable business models such as the screening of CVs of the most brilliant students to be recommended to the companies interested job placement opportunities or filing information about the interests and aptitudes of the enrolled students who represent a business value for marketing and advertising companies.

D. Cultural monopolies

Furthermore, we have to consider an aspect that may become of increasing concern in a globalised society: the cultural monopoly of those who have the economic power to include a greater amount of contents on the Web, cultural monopolies that, of course, not always are a synonym for freedom and democracy.

Online video lessons are spreading at great speed; however, we should consider an aspect that may become of increasing concern in a globalised society: the cultural monopoly of those who have the economic power to include a greater amount of contents on the Web, cultural monopolies that, of course, are not always a synonym for

freedom and democracy. For decades élite teachers were worried about the “faculty-to-student ratio”: the best classroom was the one in which everybody knew your name; now the best schools are spread broadcast networks. Today the new “Gurus” of the universities, the Saints Thomas of the present world are professors who, thanks to their video lesson, are the most popular on the Web.

VII. REINVENTING THE UNIVERSITY

Certainly, sharing materials is the first important step, since, as the Global University Network will develop, the amount of published materials will become enormous: digital texts and books, but also materials, such as notes on lessons, exercises, exam texts, video lessons can grow ever more and supply different perspectives and interpretations of a same content. A platform in which all the universities of the world can post their own contents and where the students can interact with these contents and enrich them with their thoughts, thus creating new interpretations; this could actually allow the universities to become places for producing the global knowledge, without losing the local richness and characters. In a networked world, students can learn from scholars from all over the world and contribute, in collaborative learning process, to the creation of new knowledge. The sharing of the contents of different universities of the world can certainly represent a significant step towards renewal, but a true change in the universities can take place through the establishment of consortia among the various universities of the world that cooperate in the joint production of contents in the learning environments of the Internet.

VIII. THE CONSORTIUM FOR COLLABORATIVE LEARNING

In my opinion, the future of online university can exclusively reside in a new model of distance university based on the birth of consortia among the universities of various countries of the world. The universities of the various countries of the world should pool into consortia in order to create a global centre of excellence; they should jointly design study programs of the various degree courses, hire the teachers who will have to deliver their video lessons to be posted online and select the best ones at global level. The same discipline should include video lessons of different teachers working in the universities of the various countries and, everybody in his own language and from his cultural, historical, political and religious perspective, teach the same discipline. This is the value that a consortium among universities can bring to the Web, not a mcdonaldization of contents, but the enhancement of diversity as a richness for all. The above-mentioned opportunity becomes a universal value and goes beyond the availability on the Web of video lessons, even if delivered by distinguished lecturers. The students could enroll in one of the universities members of the consortium and attend, at distance, video lessons that could be delivered by lecturers of other universities and go to their own university to exchange views on the video lesson contents with teachers and students. The new teachers should be able to carry on face-to-face interaction, but they should also be able to manage online interaction models, discuss on forums, chats, post their contents on wikis as well as be able to discover, learn and produce knowledge jointly with their own students’

community. These consortia of universities on the Internet could easily supply skills also for people who already have a job.

Creating an infrastructure of the higher education of the 21st Century involve adding to the university physical campuses a technological infrastructure thus allowing to easily develop to the University 2.0. Changing the pedagogical and knowledge production and delivery model is essential for the survival of the university and, in Italy, a significant example for a new model of distance university is represented by Consorzio NETTUNO – Network per l’Università Ovunque that was the first European consortium among university and industry aimed at realizing a new model of distance university.

IX. THE CONSORTIUM: A NEW MODEL OF ALLIANCE FOR THE FUTURE

We should be pleased to see what Italy produced in 1992. Consorzio NETTUNO was the first international-level initiative proposing a distance university model that is now considered as a model to be established to change the role and functions of traditional universities. Today everybody speaks about the video lessons made available for free by important American universities such as Stanford, M.I.T., Harvard, Berkeley. Consorzio NETTUNO made freely available for all citizens thousands and thousands of video lessons related to several degree courses of many faculties: engineering, economics, law, cultural assets, psychology, communication sciences.

The video lessons were realized by lecturers coming from several universities of world: from Great Britain to France, from Spain, from the United States, from Greece, China, Egypt, Jordan, Algeria, Austria, Morocco, Tunisia, Syria, Libya etc. Each professor realized the video lessons of his course in his own language; today, actually, the main languages of the video lessons realized by NETTUNO are: Italian, Arabic, English, French and Greek. Consorzio NETTUNO was also the first university of the world that digitized its video lessons for the Internet; already in 1997 it tried out the digitization of the video lessons of the GIOTTO research project and, since then, the process of digitization went on, developing as Web-based audio and video streaming technologies developed. A pioneering model worldwide, unluckily not for Italy, seen that the great experience made by NETTUNO, the great innovation that the Consorzio brought into the Italian universities jointly with the funds derived from enrolment fees of new students’ profiles and the great international successes were not enough to keep this model of distance university go on in our country, as it was the case with Consorzio NETTUNO that developed a new pedagogic model: the “blended model” to which the new distance teaching systems in many places of the world refer to.

Since 1992 all the video lessons included into these courses were broadcast on television channels; at first, during the night schedule of RAI – Italian Television and on the Olympus Satellite and, later on, thanks to the HotBird satellite, on the a dedicated satellite channel, RAI NETTUNO SAT, that has been broadcasting free academic lessons 24 hours a day since 15 years by now. RAI NETTUNO SAT is the only television channel in Europe that, since many years, is playing a relevant social and cultural role for all citizens and not only the Italian

ones, but also for those of other European countries, from the Arab World to Eastern Europe. The satellite allowed, thanks to television, actually democratizing the access to knowledge, bringing university lecture halls to the homes of everybody as well as internationalizing the university. Consorzio NETTUNO distance university model certainly allowed Italy to become the first country of the world that democratized the access to knowledge, thanks to the RAI NETTUNO SAT, television channel. Today, the International Telematic University UNINETTUNO, which was born from Consorzio NETTUNO, is on the first place in terms of contents posted on the Web and it has the highest amount of MOOCs at international level: over 50,000 hours of video lessons on the Internet linked to over two millions of pages of educational materials, one million of viewers following the lessons of philosophy of G. Vattimo and thousands of users on Youtube for the lessons of P. Odifreddi (35,000) and F. Ferrarotti, R. Prodi, M. Monti ect... This is an asset for Italy realized by over 7,000 lecturers of the Italian universities and by nearly 1,000 of other countries of the world is undeniable.

X. A CHALLENGE FOR EUROPE

The American industry has almost completed the realization of a huge worldwide Telecommunication network assuring the full coverage of the globe. Mastering and make profitable this infrastructure will not be a smooth transition. In this context, Europe has a card to play: developing a policy of the knowledge industry including its culture that the basis of human development. Knowledge networks among the best universities in Europe, linked to those of other countries, can create new wealth; the best universities can offer to all, in an open and democratic way, the teachings of the greatest scientists and intellectuals of the world. We will be able to build in a virtual way the university model that led to the emergence of European culture: the medieval university.

In the medieval universities, the curricula were common, students did not belong to a single university, but they could take courses in all universities existing; they moved from one location to another in order to follow the lectures of the best professors, facing exhausting travel by foot or horseback to take a course in law at the University of Bologna or a course of theology at the University of Paris. Even the teachers travelled from one site to another; the best professors were called by the universities since their presence gave prestige and power, but also attracted masses of students and young people from all over Europe.

New technologies allow mobility of ideas and, besides the physical displacement, virtual displacement of professors and students. The distance university consortia allow interaction between professors and students from different universities of the world and can actually give quickly an adequate answer to the needs of internationalization of university training system, in order to prepare for the skills required by the new labor markets, but also to implement products required by the Net Economy.

When the contents of the courses on the Internet and the course delivery models are defined by international level academics, didactic contents quality assessment is realized by the academic world and users are guaranteed as "consumers of education" since that course designers and

providers are easily identifiable. If it is true, as I believe, that the quality mark will determine the competitive challenge in the higher education and training global markets, a distance university based on a network among the best traditional universities of different countries will surely win the challenge and will be the absolute protagonist of the new frontier of e-commerce and new knowledge markets. So today, consortia for distance university can meet the needs of the new knowledge market: exposing a brand of quality; guaranteeing users and students; helping traditional universities in the transformation from an isolated system divided into classes and study materials and a repetitive system of pre-established knowledge, in an open system, capable of updating and integrating all information available on the network and realize the exchange of knowledge in the world. Distance University today allows to innovate traditional universities and make them move under open skies, with no boundaries, creating new knowledge, but also new values.

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