



EDUCATION AND CULTURE

LEONARDO DA VINCI

Second phase:2000-2006

Megatrends in E-Learning Provision

(www.nettskolen.com/in_english/megatrends)

Survey for case studies in the Megatrends project

Universidad Nacional de Educación a Distancia (UNED)

Facts about the institution

Name of institution	Universidad Nacional de Educación a distancia (UNED)
URL of institution	www.uned.es
Country	Spain
Levels in the education system	Higher education level
Interviewer	Pedro Fernández Michels
Interviewees	Mr. Miguel Santamaría Lancho, Vice-Chancellor for Quality msantamaria@cee.uned.es Mr. Timothy Read tread@lsi.uned.es

The UNED has a system of online courses **and resources** that is used to support its Distance Education Methodology. In the following table the number of courses that are offered is presented together with the number of students. The use made of the online courses and resources by the students is also presented as a percentage.

	2006	2007	Increment	No. of students that accessed the online courses in 2006	%	No. of students that accessed the courses in 2007	%
Number of courses	530	641	20,94%				
Number of tutorials	15846	18021	13,73%	8423	53,15%	7618	42,27 %
Number of students enroled in all courses	488864	514826	5,31%	115830	23,69%	140951	27,38 %

In 1972 the UNED was founded as a public university in Madrid. After an initial process of consolidation and growth in numbers of enrolment the institution starts to deliver higher education to a population segment that lives in greater distance of the capital. In order to do so it was necessary to create regional centres that introduced distance education into the rest of the peninsula and the Canaries, providing free printed teaching materials via



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postal service. The regional centres had the important function to offer face to face guidance and consultancy to the students in need of such service. The next step was the internationalization of the services provided by the institution. The institution exports its pedagogical model to Latin America and becomes the leading member of the AIESAD, the Iberoamerican Association of Higher Distance Education).

The institution sees distance education as an opportunity to reach two important goals:

- a) Equal opportunities - distance education opens training possibilities to people with low income, remote place of residence or other difficulties. In this context, the institution has especially supported the incorporation of women into the university and the labour market.
- b) Flexibility - most of the students that enrol to the institution's study programs need to combine work and studies. Distance education opens a second opportunity to those who are interested or in need of higher education and for some reason did not benefit of it before their integration into the labour market.

The growing numbers of students, currently more than 160.000, and the geographical extension of the institution's activities lead to an increasing use of ICT in the teaching and learning processes.

Contextual factors

Market size

For the Spanish national context it can be said that the total population of Spain is 40 million. Spanish is the common language in all 17 autonomous regions. Three of these regions have an own language which has official status within the region, the Basque Country, Galicia and Catalonia.

There currently exist 70 universities in Spain, 48 of which are public. The total number of registered students in Spanish universities for the academic year 2004/05 was 1.535.626.

Market readiness to use online technologies

ICTs have not yet reached a satisfactory degree of diffusion in Spain, despite recent progress. Internet penetration among households is low compared to the other EU members. One important reason are the high prices for Internet connections. Broadband diffusion, however, has been comparatively fast in the last three years, in particular in the more developed and urban parts of the country such as Catalonia and Madrid.



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The country has a low score on the Digital Divide Index, which means that disparities in access to and use of the Internet between sub-segments of the population (genders, age groups, socio-economic groups) are considerably bigger in Spain than in most of the EU25.

Target group acceptance of e-learning

The acceptance of e-learning within university students can be considered relatively high. In spite of the lack of diffusion of ICTs and the disparities mentioned in the paragraph above, the large number of e-learning initiatives in Spanish universities indicates a satisfactory level of acceptance of the use of ICT in teaching and learning among the academic community.

Digital literacy in population

It can be assumed that digital literacy in the target group is relatively high. Spanish university students and teachers use computers and the Internet on a regular basis. However the percentage of the total number of Spanish people aged 16 to 74 that do not use the computer or the Internet is slightly higher than the same figure for the UE-25.¹

National policy

Neither the central government nor the regional administrations are carrying out a specific policy in order to promoting e-learning. The projects that are being undertaken are more generic and only have an indirect effect on the development of e-learning.

“Following the e-learning initiative launched by the European Union in 2000, the Spanish government has developed a set of policies and initiatives to promote eLearning. The main points of this policy are:

- providing all schools with the equipment and facilities for accessing ICT;
- developing Internet courses and training;
- setting up an observatory and laboratory concerned with the educational applications of ICT, thereby supporting innovation and development in such applications;
- strengthening cooperation between Latin America and Europe in the area of ICT in education.

¹ DEMUNTER, Christophe (2006): “How skilled are Europeans in using computers and the Internet?” [Online article]. In: *Statistics on focus. Industry, trade and services* 17/2006. (Data retrieved on 30/10/2006). URL: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-NP-06-017/EN/KS-NP-06-017-EN.PDF



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Moreover, several plans and projects are dedicated to eLearning for vocational purposes. These are supported by the Spanish Government through the European Social Fund, and through FORCEM (Continuing Training Foundation). It is indicative of the situation that 30% of all training plans presented in 2002 were related to eLearning. Moreover, the Ministry of Industry Tourism and Commerce has created FORINTEL, a program to promote the use of ICTs in enterprises, which offers eLearning courses. Currently, the Spanish government has launched the Plan España.es for the period 2004-05. One of the action points of the Plan is the promotion of accessibility to training and digital content."²

Historical context

1. How would you describe the history of distance education in your institution?

As a distance learning university, the UNED uses different means to support study. One of these means is the virtual campus with its e-learning courses. Since its creation in the seventies, the institution has always incorporated different types of technology into its teaching model. From the very beginning, radio and TV were used as media to deliver contents. In the nineties, videoconferencing tools helped to create a network between the 60 associated centres. The main motive for these initiatives has always been to increment the resources that support the students in their learning activities. The main reasons for using ICT are the following:

- to offer a medium through which the student can solve problems and doubts
- to provide additional learning materials
- to make communication possible and reduce the feeling of isolation that characterizes the distance learning student
- to improve coordination between teachers and tutors and make it more agile

The institution's virtual campus started in the year 2000. According to a virtualization plan all the compulsory courses had to be digitalized and available online. The process has now been finished, which means that the use of e-learning is now virtually compulsory although officially the institutions policy does not oblige any student to pick up the offer of online courses.

²

www.euser-eu.org



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2. How has competence in e-learning developed in your institution and how has it contributed to your success?

Around the year 2000 the increasing use of ICT made the “distance” between the university and its students disappear. More and more programmes are being adapted to the use of information and communication technology and many administrative processes are being virtualized in order to improve services to the students and create a better situation of proximity.

The institution is currently Spain’s biggest university with more than 160.000 students and an educational program that provides studies in 26 degrees and over 500 courses in the field of lifelong learning.

Educative model

The institution applies its traditional pedagogical principles that are customization (individualization and socialisation), activity, creativity and constructivism. This underlying pedagogical framework leads to an intensive use of the collaborative tools, but without underestimating the advantages that privacy can have for some participants.

It is important to keep in mind that the institution was created as a distance learning university. In this context, e-learning is understood as a form of distance learning supported by technology that allows to carry out teaching and learning and to deliver digitalized materials over the Internet using a virtual learning environment.

The main advantages in comparison with classical distance learning are the speed, the possibilities for communication and the access to materials that would not be as easily available in a non virtual context.

3. Has this development been abrupt or would you describe it more as a gradual step-by-step process)?

The development has been a gradual process. The process started in the year 2000/2001. The courses that form the different study programs were offered following a progressive sequence.



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4. How has online education been followed up by evaluation and research and how has this contributed to your success?

Two studies have been undertaken in 2004 and 2007 via questionnaires given to lecturers, tutors and students. The objective of the study was to evaluate the different services that are offered in the online courses. The information obtained has been used to restructure these services as per the needs identified by the questionnaires.

Technical issues

5. How would you describe competence in information and communication technology in your institution?

There are two levels of users in the UNED: firstly, (typically the younger staff) who are able to use most aspects of ICT available (and are keen to learn new techniques and tools as they appear), and secondly, (typically older staff), who have difficulties using services that go beyond simple Web browsing and email.

6. To which extent are e-learning courses in your institution based on widely used technologies that can be taken into use by students without requiring them to buy additional hardware or software? (in addition to what they have from before)

The technical requirements on the client side do not include any special items. Every student has to have a computer able to read multimedia resources and equipped with a CD-Rom player, apart from a reliable Internet connection.

7. How would you describe the integration between different IT-systems that are involved in e-learning in your institution? How has this contributed to your success?

At this moment in time a high level of integration has been achieved between the online courses and the databases underlying the different IT systems in the university. This integration has proved to be a critical factor for the success of the online courses.



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- 8. What are the strengths and weaknesses of your e-learning administrative systems (from enrolment through delivery to certification)?**

The e-learning administrative systems work well although there is currently no certification provided by them. They integrate data pulled from different databases and data sources.

Courses

- 9. Which types of subjects are covered by online education in your institution and what is the relative importance of different subjects?**



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At the moment the UNED offers online courses for 29 qualifications in the areas of Humanities, Social Sciences, Sciences and Engineering.

STUDENT ACCESS TO THE ONLINE COURSES IN TERMS OF AREA

Qualifications	06 No. of subjects	07 No. of subjects	06 No. of students	07 No. of students	06 Mean no. of students per course	07 Mean no. of students per course	06 Mean no. of students that enter %	07 Mean no. of students that enter %	Difference
ACCESS (00)	24	24	4375	4304	254,02	293,14	6,34%	7,32%	0,98%
PHYSICS (07)	10	24	200	150	48,78	48,20	24,46%	30,99%	6,53%
MATHEMATICS (08)	8	19	194	136	38,58	32,30	19,88%	21,70%	1,82%
CHEMISTRY (09)	11	21	234	177	41,60	39,35	18,83%	22,51%	3,68%
POLITICAL SCIENCE (11)	12	19	974	712	90,20	101,16	9,44%	13,26%	3,82%
SOCIOLOGY (12)	5	10	346	211	43,92	40,63	12,64%	17,91%	5,28%
COMPANY ADMINISTRATION (42)	31	32	945	865	225,39	241,91	28,72%	33,94%	5,21%
ECONOMICS (43)	28	29	317	290	91,68	91,43	30,60%	33,19%	2,59%
HISTORY (44)	28	32	971	881	306,85	307,82	36,78%	40,97%	4,18%
PHILOLOGY (45)	26	28	239	243	66,00	72,13	30,39%	32,74%	2,35%
ENGLISH PHILOLOGY (46)	36	36	282	291	106,58	113,67	44,11%	44,36%	0,25%
PSYCHOLOGY (47)	45	45	1327	1401	390,80	502,16	41,11%	46,51%	5,40%
PEDAGOGY (48)	36	36	216	205	69,70	80,47	36,11%	44,36%	8,24%



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PSYCOPELAGOGY (49)	19	19	1084	812	349,43	329,83	35,37%	41,80%	6,44%
SOCIAL EDUCATION (50)	15	17	2340	2252	837,57	972,26	41,85%	49,16%	7,31%
LAW (51)	23	29	1580	1469	253,54	260,17	20,72%	21,36%	0,65%
INDUSTRIAL ENGINEERING (PLAN 2001) (52)	24	38	382	204	129,05	84,59	31,72%	44,79%	13,06%



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Qualifications	06 No. of subjects	07 No. of subjects	06 No. of students	07 No. of students	06 Mean no. of students per course	07 Mean no. of students per course	06 Mean no. of students that enter %	07 Mean no. of students that enter %	Difference
ING. TECNICO EN INFORMATICA DE SISTEMAS (PLAN 2000) (53)	17	17	1134	928	363,46	325,94	38,92%	41,81%	2,89%
ING. TECNICO EN INFORMATICA DE GESTION (PLAN 2000) (54)	13	13	608	512	182,08	175,83	35,17%	39,06%	3,89%
INGENIERO EN INFORMATICA(55)	11	12	428	364	190,85	169,83	50,59%	53,51%	2,92%
TURISMO (56)	21	21	1103	1023	318,56	323,35	37,18%	40,17%	2,99%
FILOSOFIA (PLAN2003) (57)	17	24	303	246	64,40	57,80	27,17%	30,36%	3,19%
ANTROPOLOGIA SOCIAL Y CULTURAL(59)	11	13	1482	1430	378,17	400,12	33,21%	34,74%	1,53%
CIENCIAS AMBIENTALES (60)	11	17	547	384	266,92	207,26	52,20%	60,37%	8,17%
TRABAJO SOCIAL (61)	12	18	1758	1427	519,90	487,58	37,66%	47,53%	9,87%
INGENIERO TÉCNICO INDUSTRIAL EN	10	17	310	304	133,26	123,27	41,25%	47,34%	6,09%



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ELECTRÓNICA
INDUSTRIAL(62)
INGENIERO TÉCNICO
INDUSTRIAL EN
MECÁNICA (63)

11	16	433	378	151,69	145,56	36,61%	46,72%	10,11%
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- 10. How would you describe the “onlineability” of the subjects your institution has chosen for e-learning?**

All material offered to the students has a high degree of “onlineability” although the science and engineering subjects have problems with the correct use / presentation of mathematical symbols.

- 11. Do the online courses provided by your institution have flexible start-up and progression?**

Not at the moment, at this time the online courses use a rigid calendar due to problems of enrolment, exams, etc.

- 12. What is the role or importance of synchronous and asynchronous communication between students and teachers and among students themselves?**

The majority of the interactions between students and lecturers / tutors are asynchronous.

Management, strategy and attitudes

- 13. How would you describe involvement from the institution leadership in terms of being supportive, and how has this been important for success?**

The university and its governing team have assumed a clear compromise to incorporate ICT in our model of distance education, to which end, norms have been established regarding the incorporation of eLearning tools into the didactic process.

- 14. How would you describe the attitudes of the different groups of staff towards online teaching? How has this affected your success?**

The attitude of the lecturers and tutors has been generally positive. Most people recognised the advantages of these systems, but at the same time, noted that their use added to the work load.



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- 15. Does your institution have a strategy for online education? If yes, what is (briefly) the content of the strategy and how is it followed up by employees in your organisation?**

The institution's virtual campus started in the year 2000. According to a virtualization plan all the compulsory courses had to be digitalized and available online. The process has now been finished, which means that the use of e-learning is now virtually compulsory although officially the institutions policy does not oblige any student to pick up the offer of online courses.

Within the virtualization plan, the USO-PC, a special department with experts in the use of authoring and multimedia tools, was created with the aim of offering help to teachers that wish to create adequate materials for the platforms or digitalize already existing resources. The USO-PC is also responsible for the administrative management of the VL-platform like enrolment and user management. The pedagogical framework of the courses is defined by the University Institute of Distance Education (IUED), an entity that has also been responsible for the edition of the "Guía para la Virtualización de las Enseñanzas Regladas" (Virtualization Guide for Official Education). The USO-PC follows the recommendations of the IUED but it is usually the teacher who finally decides the characteristics of his online course.

The institution applies its traditional pedagogical principles that are customization (individualization and socialisation), activity, creativity and constructivism. This underlying pedagogical framework leads to an intensive use of the collaborative tools, but without underestimating the advantages that privacy can have for some participants.

Communicative and collaborative activities in the course are backed by an important human presence: The online tutor is the main permanent reference for both students and specialized teachers of each course. He is in charge of the correct and punctual development of the activities according to the calendar and the course plan. At the same time he deals with particular problems of every single student. The online tutor is one of the most positively considered roles in the program.

At the same time, each module is moderated by one of the teachers, experts in the field covered by the module. The teachers are in charge of conducting the learning processes in each module.



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16. How does your institution deal with quality issues related to online education and has quality contributed to success?

A variety of quality control models have been applied through the years, some of which were generated on an international level. Others were designed a national level and a third group represent internal proposals of the institution itself. The academic and administrative development and management is in charge of quality control processes based on interviews and questionnaires. Results are closely analyzed by management and the teaching board in order to apply findings in the following editions of the program. In addition to this, a questionnaire to determine the level of satisfaction of all implied parties is handed out every second edition of the Masters course.

There are no explicitly defined quality standards for e-learning. The institution is working with recommendations and protocols focussed on the evaluation of materials and courses. Online teachers receive reports with suggestions based on the results of the mentioned evaluation which is undertaken by the Institute of Distance Education (IUED).

The main pillars of the institution's quality system are the following:

- a) A precise pedagogical framework provided by the IUED
- b) Adequate training for the personnel attending the online courses
- c) Quality control applied by USO-PC (support unit for virtual courses) before publicizing the course
- d) Periodical questionnaires about student's satisfaction

17. How would you describe the effectiveness of your administrative routines in online education?

Academic procedures for online education were established in the year 2000 and since then have worked very well. The tools available to the lecturers are changed, due to methodological changes or technological advances.

18. To which extent do teachers involved in online education have predictable and manageable workloads?

After an initial period of experience, the work load is calculated approximately. It oscillates around 20% of the estimated time available.



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19. To which extent does your institution collaborate with other educational institutions and how has this affected success?

The collaboration with other institutions is limited to certain postgraduate courses. The main benefit has been the enrichment of the range of courses that we can offer.

20. How would you describe the credibility of your institution (both formal and informal) with the government and public administration and how has this been an important criterion for success?

As a public university, the UNED has full credibility with the government and the public administrations of the country.

21. How are you able to handle the large number of online courses and students?

The UNED has approximately 1300 lecturers and 6400 tutors to attend its students via the online courses. There are a series of applications that connect to our data bases as part of the online courses. There is a section that gives support to lecturers in the preparation of courses. Furthermore, there is also a section that is responsible for training the lecturers to use the different resources that are available.

Economy

22. How would you describe the cost-effectiveness of online education in your institution? How has cost-effectiveness affected success?

Since the UNED combines both distance education with some face to face classroom-based studies, special attention has been given to ways to guarantee the services available for students.

E-learning is understood as a tool to support distance and blended teaching and learning methods, and as such, the UNED made a special effort in making education possible for those students who can not access the educational services offered in



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a face to face context through the network of associated centres.

23. To which extent is income from operation of online education stable and predictable?

The UNED does not have additional income from virtual courses. The virtual courses are offered as one more tool or service among those that are already available through enrolment.

24. To which extent does your institution experience pressure to be flexible to be able to adapt to a changing market?

Distance education is becoming more competitive as student numbers drop and other universities are offering courses.

25. To which extent does your institution apply a strategy of flexible employment and use staff to adapt to changes in markets?

Flexible employment is not currently an option although it may become one in the near future.