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University towards e-learning : a focus on Finlande, France and Italy

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University towards e-learning:

a focus
on Finland,
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*University towards e-learning:
a focus on Finland, France and Italy*

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Introduction

Abstract

The growing use of the instruments of information and communication technology in the world of education has enriched models of learning with new potentialities. Education provided through Internet has opened up knowledge and learning to students distant from lecture halls (people who work, the disabled, prisoners, etc.)

European universities have met the challenge of modernisation by intensifying their own e-learning activities – this is work in progress where obstacles and forms of resistance are not absent. The institutions of government are also encouraging the establishment of e-learning in higher education by supporting the digitalisation of the infrastructures of their countries and encouraging the spread of a culture that is open to the new successes of the digital industry.

The *ELUE project (E-Learning and University Education)* belongs to this context. Belonging to the initiatives to promote e-learning launched by the European Commission, its aim is to photograph the diffusion of e-learning in the university world in Finland, France and Italy. This volume presents the results of a joint survey carried out by the Conference of Italian University Rectors (CRUI), the Conference des Présidents d'Université Française (CPU), and the Finnish Virtual University (FVU) on the universities of their respective countries.

ELUE – Scenario and approach

Universities are increasingly using e-learning methods and tools to carry out their educational and training activities. The link between e-learning and the university system is well set to become increasingly close and to receive a decisive impetus in the near future, which will be marked by an increasing crossover between new technological supports and traditional forms of

learning. In some national contexts, it should also be observed, governments have acted in this area through the provision of specific laws and directives on the matter.

This subject is of great interest to the European context and the need to observe, identify and compare the different experiences underway (or which have already been completed) in this area is something that is shared by all the countries in Europe.

On the basis of these premises, the ELUE (E-Learning and University Education) project has been launched, a project which involves the Conference of Italian University Rectors (CRUI) coordinating an international work group made up of the Conference des Présidents d'Université Française (CPU) and the Finnish Virtual University (FVU) with the collaboration of the Confederation of Hungarian Conferences on Higher Education. The aim of this group is to create an international observatory on e-learning experiences in Italian, French and Finnish universities. The project is financed by the European Commission within the framework of the E-Learning Initiative.

It should also be observed that this project is to be located within the framework of the initiatives designed to foster the creation of an European Area of Higher Education, referred to the European Community action in the *Bologna Process*. A systematic, documented analysis on e-learning and the sharing at an international level of the experiences on university-level e-learning, indeed, could give a decisive impulse to the achievement of a progressive convergence of the university systems of individual countries towards the establishment of a European model.

The project pursued the following principal types of activity, bearing in mind that the action plan is exclusively concerned with e-learning activities engaged in within a university context:

1. The collection and organisation of documentation on e-learning initiatives promoted in the countries involved in the project;
2. A survey of e-learning activities which have been engaged in, or are being engaged in, in the countries involved in the project;
3. The creation and the launching of an observatory on e-learning in university education and training.

The activities carried out within the project allowed the achievement of the following results:

- Three national reports concerning the context in which the survey took place, available on the project website. www.fondazionecrui.it/elue
- This final document, reporting the results of the survey

The target groups of subjects that are potentially interested in the outcomes of this project are the following:

- *the lecturers and the policy-makers of universities*, who will find in this observatory a specific European point of reference for e-learning in the university sector, and through the documentation produced within the framework of the project will be able to gather a complete picture of this reality;
- *the students* interested in higher education through e-learning pathways in universities, because this observatory will ensure transparency of information as well as the possibility of identifying courses of education and training that meet specific criteria of quality;
- *the policy-makers*, because they will find up to date information and data on e-learning in universities that will be able to support the development of suitable policies in this sector.

This project tried to engage in in-depth analysis of the subject of e-learning in university education and training. Its implementation allowed the collection of useful information and data in relation to this specific case of educational and training supply, which at the present time are not readily and publicly available. In addition, the possibility of comparing data on different local contexts on the basis of homogeneous criteria in relation to the collection of data constitutes notable added value given the absence of comparative analyses in this sector.

In addition, a project on a European scale on e-learning in universities offers an important contribution to the process of sustaining co-operation between European universities. Starting from a common analysis on e-learning, they will be able to work towards the launching of a more radical process of convergence towards the sharing of criteria in the fields of accreditation, the recognition of qualifications, and facilitating the mobility of European Union students.

The partners in the project – taking into account their role of co-ordination and/or representation of the university system performed in their respective

countries – will be able to ensure an adequate and capillary dissemination of information within the university sector and amongst the parties involved in the field covered by the project.

By their nature, the organizations that make up the partnership have the ability to assure a national approach to their university systems. This is because the CRUI and the CPU are conferences of rectors and the FVU covers all the universities of Finland. One of the important strong points that this partnership can assure is thus an ability to make use of the role of national networks in terms of visibility, authoritativeness and the capacity to disseminate results.

During the *first stage* of the project, the following activities have been engaged in:

- the executive planning of the project;
- the gathering and organisation of documentation on the initiatives involving e-learning that have been engaged in within a university context in the countries taking part in the project;
- the establishment of instrument of investigation (questionnaire) to ensure the comparability of the results of the (non-sample-based) surveys that will be carried out in an independent way in the various countries involved;
- the planning of the observatory.

The *second stage* of the project involved the following activities:

- the launching of the observatory;
- the gathering of data through the employment of the questionnaire;
- a comparative analysis of the results of the activities of the survey.

On the basis of the results achieved by the first two stages of the project, the *third stage* will involve the following activities:

- the presentation and dissemination of the results of the project through the holding of an international conference to be held in Rome;
- activities presenting the observatory at a national level in order to ensure its continuity after the project is completed.

Project description at a glance

Introduction

Within the general framework of the 'eEurope Action Plan' and specifically within the context of the 'Elearning Initiative' programme, the ELUE (E-Learning and University Education) project was selected and co-financed in 2003 by the European Commission with its call for proposals 'Preparatory and innovative action 2003/b - elearning DG EAC/61/03 (2003/C 170/10)', and responded in particular to the invitation to create observatories on e-learning.

Partnership

The project has been co-ordinated by the CRUI (the Conference of Italian University Rectors – Italy) and has involved the participation of the CPU (Conference des Présidents d'Université Française – France) and the Finnish Virtual University (Finland).

Goals

The goal of the project is to obtain and disseminate information of a statistical character on the present role and state of e-learning in the universities of the three countries involved in the project. The project also has the goal of providing elements that can be useful in identifying, understanding, improving and implementing the best ways of establishing an observatory on the subject of e-learning in universities.

Activities

The activities engaged in to achieve this goal belonged to two distinct stages: the first was dedicated to the gathering of material in order to document the context in which university e-learning is engaged in and the second envisaged the provision of an on-line questionnaire, which had been drawn up jointly in the three countries, to all universities in Finland, Italy and France.

Results

When the survey was terminated, 75% of Italian universities, 55% of Finnish universities and 47% of French universities had filled in the questionnaire. The data that were collected allowed the outlining of certain analyses and comparisons of the three contexts examined together in relation to the principal features that characterise the phenomenon of university e-

learning, in particular from a political-strategic, financial and organisational point of view.

Methodology

During the first stage an approach of a desk analysis kind was employed with the aim of obtaining documentation of various kinds on the phenomenon of e-learning in the three countries examined by the project. The second stage, when a survey was carried out involving all of the universities in the three countries chosen by the project, involved the drawing up and provision of an on-line questionnaire to universities. The sending out of the questionnaire was preceded by a preliminary operation which involved the identification of a figure for each university who performed the role of being an official delegate of that university in matters connected with e-learning.

Dissemination and Follow-up

Beginning with the termination of the survey, the first results that were available were made the subject of presentation and discussion at a national level at certain public events (seminars, conferences, etc.). The termination of the project, in addition, will be marked by an international conference where the results of the project will be presented to a platform of representatives of the institutions of higher education of the various countries of the European Union. The partners involved in the project also hope to create the pre-conditions for continuing in the future the experience that has already been launched.

The results of the survey

A comparison between Finland, France and Italy

As is illustrated in the introductory part of the volume, the results achieved by the ELUE project are the outcome of two distinct kinds of activity: during the first stage of the project, in fact, the work groups of the three countries dealt with the study of the variables of the contexts of the phenomenon examined by collecting information on the different national realities in terms of the organisation of the university systems, the implementation of national policies to sustain e-learning (including the laws and directives governing this subject), and the collection of the results of the previous national experiences relating to documentation of this subject. During the second stage, on the other hand, following the drawing up of a questionnaire which was agreed with all the partners and provided to all the universities of the three countries involved, information was collected on the diffusion and the implementation of e-learning within the university world. The results that emerged from the activities of the ELUE project are presented below in a way that first of all emphasises the elements of comparison that emerged during the first stage of desk analysis and then examines the principal aspects that were brought out during the second stage through the provision of the questionnaire to people responsible for the area of e-learning in the universities of the three countries involved.

The Results of the First Stage

Below is provided a comparison of the results that emerged from the three national reports and this comparison is organised into four principal sections: the organisation of the systems of higher education; institutional support and public financing for e-learning in universities; the levels of development of e-learning in universities; and the different levels of development of literature in the field.

1 *The organisation of the systems of higher education*

The three national systems of tertiary education that were compared are different from each other both because of the high presence of various typologies of institutions within the world of national systems of higher education and because of the different size of the three contexts considered, above all in terms of students and the number of structures involved. For example, the Italian University of Rome ‘La Sapienza’ alone has a number of enrolled students that is only slightly less than the total number of Finnish university students. In addition, in Finland there are twenty-one universities as compared to seventy-seven in Italy and eighty-five in France (considering only French universities in a narrow sense).

In all three countries an organisational model of university studies is in force that envisages the organisation of programmes into three cycles of instruction.

The information provided below in this section is taken from:

http://www.eurydice.org/Eurybase/frameset_eurybase.html

- *Finland*

“In Finland, institutions of higher education include universities and polytechnics. In addition, university level education is provided at one military academy, the National Defence College run by the Defence Staff.

There are 20 universities in Finland and more than 164,000 university students in all. Ten of these universities are traditional multidisciplinary universities and the remaining ten are specialised institutions. Three of the specialised universities are schools of economics and business administration, three specialise in engineering and architecture and the remaining four are art academies. These academies include the Sibelius Academy (music), the University of Art and Design, the Academy of Fine Arts and the Theatre Academy (theatre and dance).

The degrees are mostly lower (total of 180 ECTS, approximately 3 years) or higher (in all 3+2 years, 180+ (90)120 ECTS) academic degrees, i.e. Bachelor’s and Master’s degrees (both are undergraduate degrees in Finland) or postgraduate degrees, i.e. Licentiate (2 years) and Doctor’s (4 years) degrees.

University-level education is also provided by a military institution of higher education, the National Defence College, which is part of the Defence Forces.”

- *France*

“There are three types of institutions, each subject to different legal requirements: universities, State institutions or schools for higher education, and private institutions or schools for higher education. Some technical schools in the private sector may, however, be recognised by the State.

There are 85 universities, as well as three national polytechnic institutions (INP). They offer scientific, cultural and vocational education and are pluridisciplinary. Each is composed of units for education and research UFR for each subject, with common objectives. They may also regroup institutes and schools created by decree, and research departments, laboratories and centres created by decision of the university governing board. Each component of the university determines its internal rules and structures. Thus university institutes of technology IUT (created in 1966) are attached to universities, as are university teacher training institutes IUFM created under the law of 1989, and vocational university institutes (IUP, created in 1991).

In 2000, there were 101 IUTs, 28 “IUFM” s, and 222 IUPs. The number of universities has risen since 1991, due to the development plan called “Université 2000”. This plan allowed new universities, IUT/IUPs and university annexes to be created.

In 1999 - 2000, 2,094,781 students were enrolled in higher education. Of these 2 million, nearly 1.4 million were enrolled in university. 80,450 were enrolled in university institutions for teacher training (“IUFM”); 113,520 were enrolled in university institutes of technology IUT 236,764 in higher technician departments STS 70,231 were enrolled in preparatory classes for the Grandes Écoles (CPGE), etc.

The branches of study in higher education are very diversified. They are divided into short and long courses, and are characterised by the nature of the diplomas studied for.”

- *Italy*

At the time of the survey, “University higher education” is provided in the 77 university institutes, sub-divided as follows:

51 state universities located throughout the national territory;

3 state polytechnic institutes;

12 free universities;

6 university institutes, 4 of which are state institutes (Istituto universitario

navale di Napoli – Naval university institute of Naples; Istituto universitario orientale di Napoli – Oriental university institute of Naples; Istituto universitario di Scienze motorie di Roma – University institute of motory sciences of Rome; Istituto universitario di architettura di Venezia – University Institute of architecture of Venice) and 2 are free university institutes (“C. Cattaneo” of Castellanza and University institute “Suor Orsola Benincasa” of Naples).

2 Universities for foreigners: Perugia and Siena;

3 higher schools (scuola Normale Superiore di Pisa, Scuola di studi superiori universitari e di perfezionamento “S. Anna” of Pisa – School of higher university and specialisation studies “S. Anna” of Pisa; Scuola internazionale superiore di studi avanzati SISSA di Trieste – Higher international school for advanced studies SISSA of Trieste).

The teaching reform of university courses foreseen by regulation no. 509 of 1999 has been carried out in the academic year 2001/02. The reform has been implemented in the first year of the new university courses. Therefore, in the Italian universities there are courses based on the old regulation, which are destined to disappear, and courses based on the new regulation.

The reform foresees the following formative objectives:

The degree laurea (L) course is designed to provide students with a high level of understanding of methods, cultural and scientific aspects of their field, as well as specific professional understanding.

The purpose of the laurea specialistica (LS) course is to provide students with advanced competence for highly qualified activities in specific sectors.

The Master aims at ensuring scientific specialisation and high permanent and recurrent training.“

2 *Institutional Support and Public Financing for E-learning in Universities*

In the three countries compared there is an evident varying political sensitivity on the part of government institutions towards policies for the financing of e-learning in the university world.

Indeed, in France and Finland the systems of higher education benefit from public funds that are expressly intended for the promotion of e-learning in universities. This is the opposite to what happens in Italy where the Ministry for Education has not as yet envisaged funds to be allocated to universities for this purpose.

- *Finland*

Since 2001, The Ministry of Education has granted Finnish universities 9 million euros a year to develop virtual university education. Thanks to this special funding, nearly 1000 online courses have been produced during the years since 2001, providing close to 2500 study weeks. (This corresponds to about 3300 ECTS). All in all, over 100.000 study week credits have been completed in online courses organized by the universities and their joint networks. In the future, the Ministry of Education expects the online education produced with the help of the special grants to become an established core activity in Finnish universities.

- *France*

In the last 10 years, two types of measures have been taken to promote the dissemination of e-learning in the universities:

- the encouragement and support given to the institution's projects as part of the contractual policy between the State and the institutions;

- the financial support to inter-university-type projects: calls for proposals, support to common multi-media resource projects, etc.

It was with the launch, in 1998, of the Plan d'Action Gouvernemental pour la Société de l'information (PAGSI - Governmental Action Plan for the Information Society), that support actions to specific projects were carried out, outside the scope of the contractual policy. This policy was extended from 1998 onwards, particularly as a result of a more consistent support from the State. From 1998 onwards, with the PAGSI, support to the national and inter-university projects has been established. The contractual policy no longer constitutes the only vehicle by which the State supports the development of the ICT in universities. A series of actions has been launched, including calls for proposals for the development of digital campuses, regional digital universities and the creation of digital working environments.

- *Italy*

In Italy the process of the spread of e-learning within the university world has in fact taken place without the presence of significant legislative initiatives and financial support. The universities that have developed e-learning experiences have autonomously chosen to allocate a part of their budgets to such activity. In this picture two exceptions stand out and take the form of recent initiatives. The first is the *CampusOne* project of the CRUI which, within a large programme of innovations intended for certain courses in

Italian universities, was also between 2001 and 2004 able to promote the adoption of new technologies for teaching – hitherto the most important contribution to the spread of e-learning within the Italian university system. The second is the decree of 17 April 2003 (the Moratti-Stanca decree) which created telecommunications universities in Italy but whose overall benefits for the development of e-learning have been of little weight principally because this decree envisages no form of support or encouragement for already existing universities.

3 The Levels of Development of e-learning in Universities

Of the three contexts compared, that of Finland is the one that is most developed from the point of view of the spread of e-learning within universities. Initiatives are present in all the universities and are engaged in both at the level of individual universities and in consortia which take advantage of state funding that is expressly intended for the development of e-learning activity.

The Italian and French situations, albeit with major differences that put France on a higher level, contain a high level of internal heterogeneity characterised by the co-presence of certain more evolved realities and a remaining sphere of universities that are only marginally involved in this field.

However, whereas the French university scene has a multiplicity of initiatives (in particular, beyond the individual experiences of specific universities, a number of digital campuses that link together a high number of French universities and are the expression of a deliberate national policy), in Italy the advanced points in this field are largely the outcome of specific policies adopted by individual universities.

4 The Availability of Sources of Documentation

In Finland it was possible to gain access both to detailed information on individual projects underway in universities and to studies and analyses on the phenomenon of e-learning in the country.

In France a notable availability of documentation on initiatives connected with e-learning in higher education and on national studies that address the various questions and issues connected with the subject of e-learning was encountered.

In Italy, given the more recent character of e-learning within the university world, there is a significant shortage of instruments of documentation and

analysis on the phenomenon of e-learning in universities, and these can only be made accessible only through sporadic research initiatives. Indeed, the ELUE project is one of the first experiences whose objective is to develop a detailed observation of e-learning initiatives in the world of Italian higher education.

The Results of the Second Stage

The first signal to emerge as regards the attention that the university systems which had been subjected to the survey pay to the subject of on-line teaching is that of the presence within universities of a *policy for the development of e-learning*. This element, in fact, especially if considered in the light of the only recent presence of e-learning in the university world, is of great value at the level of information because it allows a measurement of the interest in this subject by the world of higher education that does not confine itself to bringing out the presence of the more or less episodic character of individual initiatives launched within universities but which, rather, investigates in a more detailed way the adoption of a centralised direction that concerns the institution as a whole of individual universities. This circumstance characterises the entire Finnish context where one can affirm that all of the universities of this country have adopted a strategic vision in relation to the question of e-learning. The results obtained by the French survey allow us to establish that about 80% of all French universities have adopted an overall approach to the subject. The Italian situation, and here it is calculated that about two-thirds of the university system is characterised by the presence of a policy towards e-learning, appears at first sight to be more behindhand than is the case with the other two countries chosen for comparison. It should, however, be observed that Italian universities have been involved in a rapid growth trend in recent years, above all beginning in the year 2002, and that this is a harbinger of further developments in this area in the immediate future. From this point of view, on the other hand, the situation as brought out by the survey conducted in France is decidedly more rooted given that, in the year 2000, 60% of the universities that were active on this front had already set in motion a policy for e-learning. However, it should also be noted that in relation to all these three countries the official adoption of an overall approach within individual universities in order to sustain the acquisition of e-learning methodologies cannot be immediately attributed to the presence of an approach that is homogenous and is shared by all the structures and by all the teaching staff within the individual universities. This is also true in the light of the results of the survey that was

carried out in Finland where, despite the fact that the use of e-learning is carried out in a more widespread way and within government programmes that are designed to involve the university network in a systematic way, the survey at a national level did not fail to bring out greater initiatives in this field on the part of certain departments as compared to others, as well as the greater dynamism of certain lecturers when compared to their colleagues who are involved to a very small degree in this sector.

Similarly, the level of participation of the universities of the three universities in *consortia that deal with e-learning* constitutes an item of information that was brought out by the survey which, although it does not provide detailed elements on the modalities by which on-line teaching is engaged in, is nonetheless a further indicator of the interest that the subject has provoked amongst institutions of higher education. All the universities in Finland take part in at least one consortium and there are even cases when one university is at one and the same time engaged in thirty partnerships dealing with the subject of ICT for teaching purposes. In France, on the basis of the answers that were received to the questionnaire from the universities, it emerged that 82% of all universities take part in consortia for e-learning and that they are encouraged in these activities by specific national policies for the promotion of e-learning at a university level. 67% of Italian universities are involved in initiatives of the consortium kind in the field of new technologies for teaching and about 40% of them take part in at least two consortia of this character.

To focus in our attention on what takes place within universities, a useful element in interpreting in a more effective way the level of participation of universities in the process of the advance of e-learning lies in investigating how many universities have their own *specific internal structures devoted to ICT and e-learning*. In relation to this aspect of the survey as well, in reality we do not have before us an indicator that is able to provide an account in a precise way of the level of diffusion of e-learning in the university world although we can utilise this statistic to achieve a better comprehension of the direction that universities have taken in relation to this subject and the level of attention that they pay to technological innovation for teaching purposes. In this sense, the notable dynamism that has already been demonstrated as regards the case of Finland is reflected, in relation to this aspect as well, in a capillary presence of internal structures for e-learning that the survey detected in almost all the universities of this Scandinavian country. The French and Italian universities are also endowed with a significant number of such structures, which, indeed, are present in 75% of the universities in France and 82% of the universities in Italy.

As regards this specific aspect, moreover, the survey further deepened the study of such structures and brought out the various functions that are assigned to them. The results of this examination provide a picture that reveals a condition of greater advantage for the Finnish universities (where such centres deal to a high degree with a plurality of initiatives which are closely connected with the development of e-learning activity), whereas in the Italian and French universities there are still significant margins for the strengthening of these organisational units. Indeed, whereas the three countries that have been compared appear to have a great deal in common as regards the substantial diffusion of activities of a more markedly technological character that are engaged in by the university centres examined by the survey (amongst which may be listed technical support for lecturers), the distance between the national systems becomes more marked where one considers, for example, the role of pedagogical support offered by these centres, which is widespread in the case of Finland as compared to the still marginal importance of such activity in homologous structures in the two countries of Southern Europe.

Turning to an examination of the *objectives* that lead universities to adopt forms of teaching that are provided through the utilisation of ICT, a substantial unanimity emerges amongst the three countries that were subjected to this comparison, in which is to be observed a general consensus in attributing to e-learning a capacity to increase the quality of the learning of the students and at the same time to offer a high level of flexibility to the modalities of access to the supply of teaching. And only secondarily, as compared to these two objectives of the strengthening of traditional teaching, is there also an interest in intercepting the request for education by workers who are students. In this way the primary importance is confirmed of a vision of e-learning which, although it does not neglect the provision of teaching supply accessed solely at a distance by a target that is unable to be present in the lecture halls, tends in the first instance to be characterised as an opportunity by which to enrich traditional forms of in-presence teaching.

A further reality that the systems of the three countries under examination have in common is the fact that a low number of universities perceives in e-learning an effective way of reducing their costs. The benefits in terms of the reduction of costs that the business world achieves through distance learning do not, therefore, seem to be applicable to the world of higher education which, indeed, is required to engage in investments on a notable scale in order to set in motion adequate e-learning initiatives.

The greatest *obstacles* that universities encounter in implementing and strengthening their own e-learning activities have as their principal agents specifically lecturers themselves, above all in terms of a lack of cultural acceptance of an approach that is strongly innovative in character as compared to traditional forms of teaching. The forms of resistance of lecturers derives in reality also from the absence of a system of full recognition, at the level of career advancement, of the greater effort required by activities that involve the preparation and provision of on-line teaching: this possibility, appears, indeed, to be very rare in France and to be almost totally non-existent in Italy. To this is added an impediment of a juridical character that the survey brought out in all the national contexts that were subjected to examination by the survey: the questions of copyright and the intellectual property rights of on-line materials.

In general, it is interesting to observe that the subjects and issues connected with the resistance of lecturers are more relevant than the needs for investment in, and the financing of, e-learning which, however, in Italy seem to have a greater priority than in France and Finland. A third obstacle which is perceived, leaving aside the national boundaries within which the phenomenon has been examined, lies in the need that is recognised in these three countries to strengthen the professional skills and expertise, and increase the availability, of those professional figures who are indispensable for the planning and implementation of a teaching supply in the form of e-learning.

The survey also allowed an exploration of the *possible risks* that the university world currently perceives in the spread of e-learning. A notable part of those who filled in the questionnaire do not detect particular dangers in the progressive process of the establishment of new forms of teaching that employ the utilisation of ICT. However, in the academic world of the countries examined, there is to be observed a certain agreement on the need to address with due caution the potential damage that such technologies could inflict at the level of an undervaluing of the theories of pedagogy and of the importance of face-to-face activities.

The promotion of e-learning in the university world appears, therefore, to have amongst its requirements that of encouraging the involvement of teachers, an objective that universities pursue in the main by establishing specific *services for lecturers in the area of ICT*.

An important primary fact is to be found in the observation that, in fact, all the universities that took part in the survey are able to help lecturers and

students in solving the technical problems connected with matters relating to information and communications technology.

However, if we move forward to analysing how many universities have established initiatives involving the training of lecturers in the use of ICT, it emerges that only in Finland have all the universities that took part in the survey activated initiatives of this kind. In France and in Italy the presence of experiences involving training directed towards lecturers learning about new information and communications technologies was an element that was detected in about 70% of the universities that filled in the questionnaire.

In addition, it is not unusual for a university to make available to lecturers the opportunity of purchasing a computer at a discounted cost. This is a possibility that is widely practiced in Finland, but in France and Italy it affects a little more than a half of the institutions that took part in the survey.

The possibility of having an e-mail address provided by the individual university to which lecturers or students belong appears, instead, to be a goal that has been widely achieved by the university systems that were subjected to examination for both their lecturers and their students. With respect to students, however, Italy is in part an exception given that the process of making available an e-mail address is a process that is still underway in a narrow group of universities that have still not yet provided this service to their enrolled students.

The goal of obtaining information about the scale and the modalities of the *financing of e-learning* in universities came up against the general difficulty that was experienced by universities in quantifying in a specific way the size of the resources that were allocated to the implementation of forms of on-line teaching. In general, there is to be observed (leaving aside the individual countries surveyed) a high variability in the resources employed by universities, which in the case of those who invest the most amounts at the most to about 5% of their entire budgets. On the other hand, the survey revealed, with a certain uniformity amongst the countries that took part in the survey, the predominant role of state funding as opposed to the funds for e-learning that the universities receive from the regions and from the European Union. However, whereas in France and in Finland there are specific government contributions that are explicitly intended for e-learning in higher education, for Italian universities the use of state funds in the e-learning sector is to be attributed to the choices that individual universities make in relation to the allocation of the total resources that are received from the Ministry of Education.

In addition, whereas in Finland the students that use on-line teaching services do not have to meet additional costs as compared to the traditional courses in the universities that filled in the questionnaire, the surveys that were carried out in Italy and France revealed that on-line students have to meet higher costs in 17% and 13% respectively of the universities that took part in the survey.

As regards the various destinations of economic resources for the development of e-learning which the universities have available to them, there is also the provision of *financial inducements to lecturers* who choose to engage in activities connected with teaching that is accessed through Internet. At the moment one is dealing with a strategy that involves drawing lecturers nearer to the new modalities of teaching that is to be encountered in only a minority of the universities of the three countries that took part in the survey but one which, nonetheless, seems destined to increase to a notable extent. Indeed, according to the information that was collected by the survey in question, when we add the universities that already provide additional sums to on-line lecturers to those universities that declared that they want to activate such forms of incentives in the future, in France and Italy one can envisage an interest on the part of universities in this reality which can be estimated at about 50% of the university system.

Similarly, the *scientific research* engaged in by the universities of the three countries that took part in the survey whose subject matter is the questions and issues connected with the phenomenon of e-learning is an activity that is not yet present in all the universities that were investigated but one which has certain margins for extension. In France, the universities that declared that they carried out research into subjects and topics connected with the use of new technologies for teaching are greater in number than those in which such activity is not engaged in. In Italy, in more or less a half of the universities that replied to the survey e-learning has secured the attention of researchers. But these universities are flanked by a further 20% which declare that they will take action on this front in the future. These trends are also confirmed by the results obtained by the survey that was carried out in France.

Different aspects of the analysis, although produced by a shared questionnaire, have specific national characteristics which make an immediate comparison of the results of the survey more problematic. It thus becomes preferable to comment on the survey through a break down of the results according to the country studied. This is the purpose of the following

chapters which illustrate all the elements of greater significance that emerged in Finland, France and Italy, country by country.

Some further elements to be used in the comparison, in addition, can be derived from the information on *individual cases* of teaching supply that are offered through the use of modern multimedial and Internet instruments which universities were able to describe by filling in a specific section of the questionnaire. These initiatives, although not organised according to methodological criteria designed to make them statistically representative, being, instead, the outcome of a spontaneous process of participation in the survey, offer useful points of reflection by which to deepen the analysis of the phenomenon as examined in these two national contexts.

FINLAND*

Introduction

This report draws a picture of the eLearning within the Finnish university sector. The main data used to draw this report is from the ELUE survey carried out Finnish universities in 2005. Additional information has been collected from documents published as part of the Finnish Virtual University (FVU) network activities. FVU is the most important national organisation in Finland devoted to eLearning and virtual university developments.

The Finnish university system

The Finnish University system consists of 20 universities. All the universities are public i.e. state-run. The Finnish government provides through Ministry of Education some 65% of their funding. Each university and the Ministry of Education conclude a three-year agreement on target outcomes to determine the operational principles.

The most important legislation governing the universities are the Universities Act and Decree, the Decree on the Higher Education Degree System and field-specific Decrees, which lay down, among other things, the responsibility for education in a given discipline, degree titles, and the structure, extent, objectives and content of education.

1. The Universities can be grouped into three distinctive groups:
 - Multi-faculty universities (10)
 - University of Helsinki (est. 1640)
 - University of Joensuu (est. 1969)
 - University of Jyväskylä (est 1969)

* Pekka Kess, Piia Tolonen, Hanna Salovaara

- University of Kuopio (est. 1966)
 - University of Lapland (est. 1979)
 - University of Oulu (est. 1958)
 - University of Tampere (est. 1925)
 - University of Turku (est. 1920)
 - University of Vaasa (est. 1968)
 - Åbo Akademi University (est. 1918)
2. Specialized universities (6)
- Helsinki University of Technology (est. 1849)
 - Lappeenranta University of Technology (est. 1969)
 - Tampere University of Technology (est. 1965)
 - Helsinki School of Economics (est. 1911)
 - Swedish School of Economics and Business Administration (est. 1909)
 - Turku School of Economics and Business Administration (est. 1950)
3. Art academies (4)
- Academy of Fine Arts (est. 1848)
 - Sibelius Academy (est. 1882)
 - Theatre Academy (est. 1979)
 - University of Art and Design (est. 1871)

Map. Universities in Finland



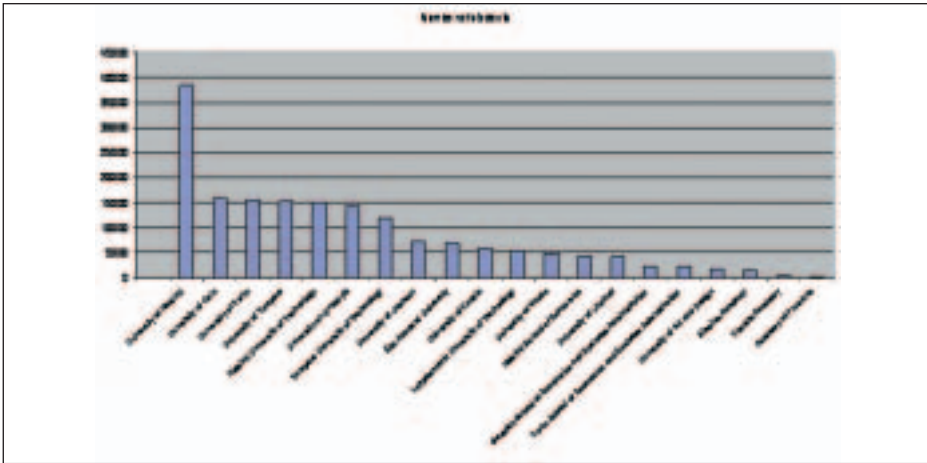
In addition to these universities under the Ministry of Education there is the National Defence College under the Ministry of Defence. This institution is many times considered to be part of the Finnish university system.

The universities in Finland recruit annually over 21000 new students and the total number of students is as follows:

- Undergraduate students 150000
- Postgraduate students 25000
- Students, total 175000

The size of Finnish universities varies; the largest one is the University of Helsinki and the smallest the Academy of Fine Arts (Fig 1).

Figure 1. Number of students of the Finnish universities



Note. The Universities in figures 1 (from the left to the right) are:

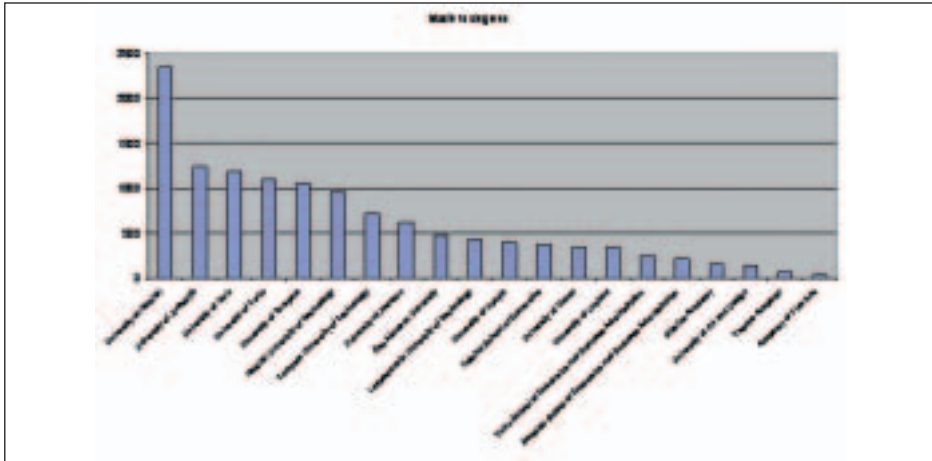
University of Helsinki, University of Oulu, University of Turku, University of Tampere, Helsinki University of Technology, University of Jyväskylä, Tampere University of Technology, University of Joensuu, Åbo Akademi University, University of Kuopio, Lappeenranta University of Technology, University of Vaasa, Helsinki School of Economics, University of Lapland, Swedish School of Economics and Business Administration, Turku School of Economics and Business Administration, University of Art and Design, Sibelius Academy, Theatre Academy, Academy of Fine Arts.

The Universities grant bachelors, masters, licentiates and doctoral degrees as follows:

- Bachelor's degrees 3000
- Master's degrees 12500
- Licentiate degrees 500
- Doctoral degrees 1500

The university of Helsinki is also largest when measured by the number of Masters degrees. The order with other universities is slightly different (Fig. 2) compared to that of the number of students.

Figure 2. Number of the Masters degrees granted per annum in Finnish universities

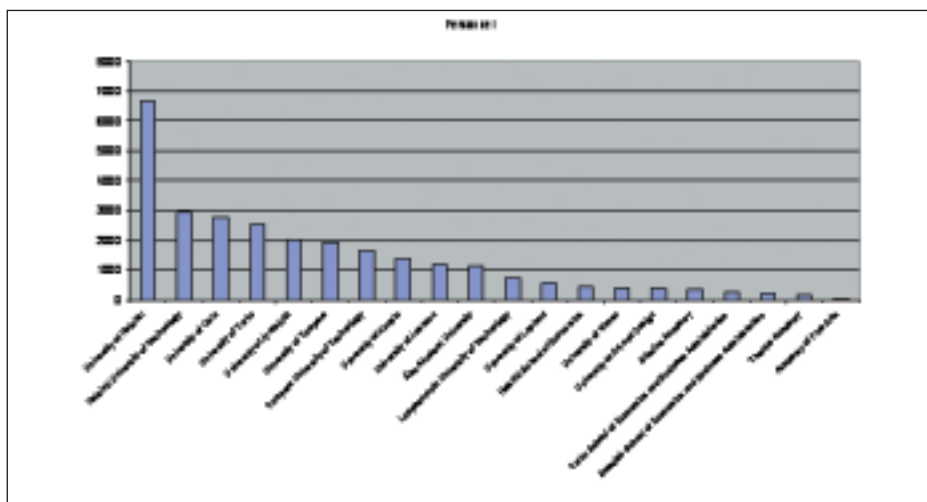


Note. The Universities in figures 2 (from the left to the right) are:

University of Helsinki, University of Jyväskylä, University of Oulu, University of Turku, University of Tampere, Helsinki University of Technology, Tampere University of Technology, University of Joensuu, Åbo Akademi University, Lappeenranta University of Technology, University of Kuopio, Helsinki School of Economics, University of Vaasa, University of Lapland, Turku School of Economics and Business Administration, Swedish School of Economics and Business Administration, Sibelius Academy, University of Art and Design, Theatre Academy, Academy of Fine Arts.

The total number of employees in Finnish universities is well over 30000 (Fig 3)

Figure 3. Number of the staff in Finnish universities



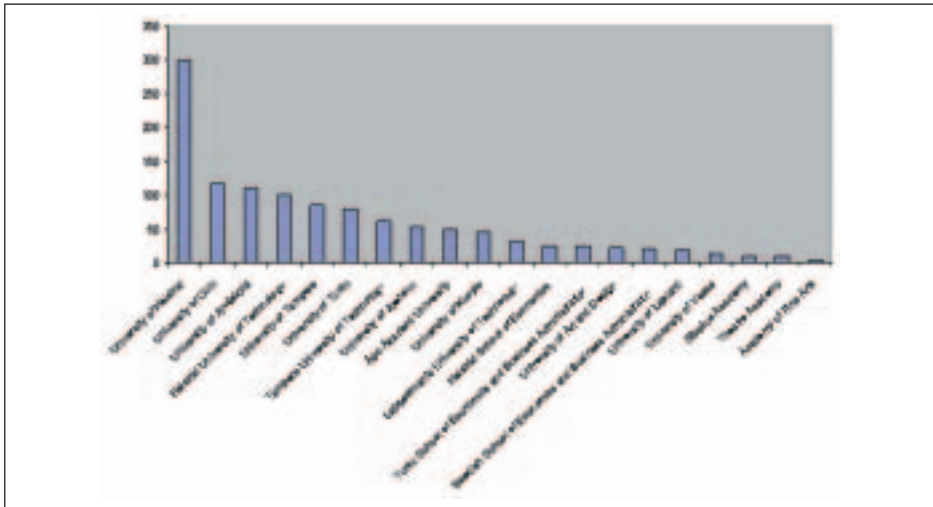
Note. The Universities in figures 3 (from the left to the right) are:

University of Helsinki, Helsinki University of Technology, University of Oulu, University of Turku, University of Jyväskylä, University of Tampere, Tampere University of Technology, University of Kuopio, University of Joensuu, Åbo Akademi University, Lappeenranta University of Technology, University of Lapland, Helsinki School of Economics, University of Vaasa, University of Art and Design, Sibelius Academy, Turku School of Economics and Business Administration, Swedish School of Economics and Business Administration, Theatre Academy, Academy of Fine Arts.

The state budget to cover funding and building investments of the Finnish universities is about 1.2 billion euros. There are also various external sources of funds available:

- External funding EUR 640 million
- Academy of Finland EUR 121 million
- National Technology Agency of Finland (Tekes) EUR 78 million

Figure 4. Funding ('000 €) of the Finnish universities



Note. The Universities in figures 4 (from the left to the right) are:

University of Helsinki, University of Oulu, University of Jyväskylä, Helsinki University of Technology, University of Tampere, University of Turku, Tampere University of Technology, University of Joensuu, Åbo Akademi University, University of Kuopio, Lappeenranta University of Technology, Helsinki School of Economics and Business Administration, University of Art and Design, Swedish School of Economics and Business Administration, University of Lapland, University of Vaasa, Sibelius Academy, Theatre Academy, Academy of Fine Arts.

The Finnish university system includes also the network of Open Universities. These are departments inside the regular universities serving students both inside and outside of campuses. The open universities have over 80000 students all together. Since open universities supply teaching and learning services outside of the campuses – even to very long distances, the open universities have been in front line when universities have been developing flexible and distance teaching methods. In the past 10 or so years the eLearning tools and methods have become a natural part of the ways of which open universities carry out their teaching tasks.

Most of the universities have also a continuing education function organized one way or another. The courses offered can range from a few hour seminars all the way to large degree programs, like MBA's. The Finnish universities have some 85000 continuing education students.

The Finnish university system can also be described with the following indicators:

- New students per teacher 2.7
- Students per teacher 22
- Master's degrees per teacher 1.6
- Doctorates per professor 0.6
- Budget expenditure (excluding cost of premises) per student EUR 5,434

The Finnish Virtual University

The Finnish Virtual University (FVU) is an organisation founded by all Finnish universities together with the Ministry of Education. The actions of the virtual university are the support of the use of information and communications technologies in teaching, administration, student guiding and organising support services for research.

The essential aim of the FVU is to promote networking between Finnish universities, in particular with respect to the use of new ICT - including provision of online teaching. All students in Finnish universities are the primary target population for FVU services, especially those who want to study - and earn credit for - courses *unavailable* in their own universities. Facilitating virtual student mobility between universities is an important strategic objective. An inter-university agreement on student-mobility (facilitated through the FVU) allows students to study, and earn credit for, courses taken at other Finnish universities.

The FVU is not a university and cannot confer awards on students. Most of the activities it promotes are carried out directly by - or through collaborative projects between - the participating universities. The University providing a course is responsible for the production of the required course materials and for tutorial support to students - and academic responsibility for the programs resides with that university. Pedagogical strategies range from fully online programs, to traditional classroom teaching supported by e-learning. Courses are developed by the faculty in the participating universities.

The actions of the consortium are defined by the member universities, so the stakes are in alignment with the strategies of the universities. The executive team appointed by the FVU consortium has also stated that especially those new project proposals connected to joint services within the FVU will be evaluated later in co-operation with representatives of the

development unit of FVU and the Ministry of Education. This will allow the evaluation of possible overlapping in projects, their position and their technical implementation in regards to the services designed and produced by the development unit. It is important that the entire spectrum of consortium members' views is taken in to notice when aligning actions.

A key part of the national strategy is to provide a national portal to link the virtual activities of the participating universities - providing in effect a virtual campus for students and teachers. When fully operational the FVU-portal (*www.virtualuniversity.fi*) will provide information on on-line courses and on facilities for tutoring students. It will additionally provide access to online library and bibliographic services; advice to course developers and providers (e.g. on appropriate platforms to support e-learning); and access to a range of subject-specific, cross-disciplinary, teaching and research networks.

The Key Actors of the FVU

The actions of FVU are coordinated by the consortium assembly and the executive team appointed by the consortium, the FVU services organisation and the member universities of FVU. The essential operators are, among others, the co-operation networks that arise from the needs of universities and the contact person(s) appointed by universities and development projects.

Consortium Assembly

The decisions of the consortium are made by the consortium assembly. Each member and the ministry of education appoint one representative and one subagent for three (3) years at a time. According to the rules currently valid, the consortium plans to develop the customs and co-operation networks of virtual education into a natural part of the Finnish university system (basic training, continuing education, openuniversity and further training).

In order to execute the purpose thereof, the consortium shall in co-operation with its members

- develop university level databases for education and study services
- coordinate offered web-studies, student guidance and researcher network actions
- develop registries for educational programs, student and credit registers and databases
- publish FVU related materials.

In addition the consortium can

- make contracts required by actions
- collect fees to finance actions
- establish necessary bodies of action and development projects.

Executive team

The consortium is run and the assemblies are planned by the executive team. The tasks of the executive team might be modified in the updating of the FVU strategy made during 2004 as it mainly concentrates on task-sharing and stabilising actions of the consortium, for example in the case of a development unit active in a project period.

FVU services

The FVU Services consists of the director, two development managers, communications manager and secretary. Additional personnel can be added into projects when necessary. The FVU Services is the most visible part of the FVU, even it manages less than 10% of the total funding from the Ministry of Education to the virtual university activities.

Member Universities and Networks

The FVU has a two-level network of contact persons. Each university has appointed a contact person responsible for organising and informing of FVU operations and actions. Also, the FVU network projects have a network of contact persons compiled of representatives of the university coordinating the project. These networks represent a cumulating experience and expertise in teaching, research and service-network actions.

Representatives of the networks meet regularly. A national virtual university conference is also held annually, which will be organised in co-operation with network contact persons. The e-mailing lists of the network have been maintained by the development unit but will be transferred to a service organisation to be founded during 2005.

Each university has compiled a strategy for information and communications technologies in teaching. The following description includes basic information of member universities and describes the contents of their ICT in teaching strategies.

This part of the FVU consumes over 90% of the funding universities receive annually from the Ministry of Education for the eLearning purposes.

FVU contact persons at the member universities

Every FVU member university has nominated one or several contact persons. Their responsibility is to act as contact point at their own university in all Virtual university matters. These contact persons meet several times a year to discuss and define their role in the virtual university context. In addition to the meetings there are other types of contact forums as well.

The Survey

Identifying who were to be the recipients of the questionnaire inside Finnish universities was an easy task. Even the main organisation in charge i.e. Rectors Council have their own network of university representatives it was clear the FVU network of contact people was the only right choice for the survey purposes. These people represent all universities in Finland and they are in charge of virtual university and eLearning activities coordination in their universities. The Finnish Universities Rectors' Council also promoted the survey in order to attract high participation.

Representative from the following 12 (60%) universities answered the questionnaire:

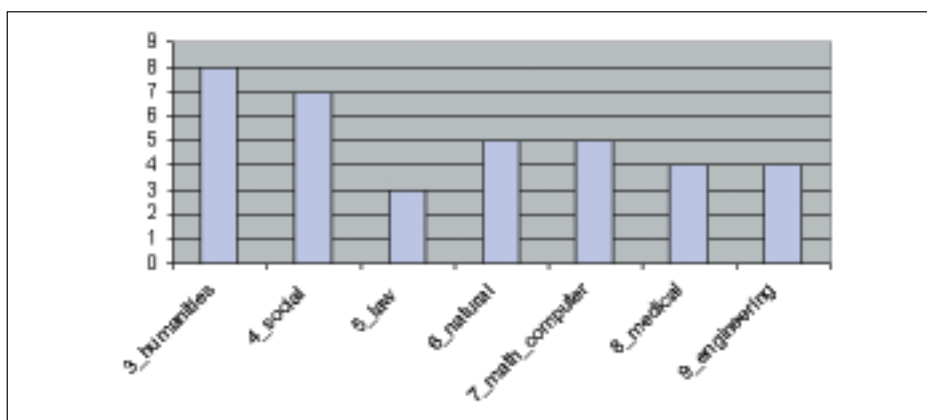
1. University of Helsinki
2. University of Kuopio
3. University of Lapland
4. University of Oulu
5. University of Tampere
6. Åbo Akademi University
7. Lappeenranta University of Technology
8. Tampere University of Technology
9. Turku School of Economics and Business Administration
10. Sibelius Academy
11. Theatre Academy
12. University of Art and Design

These universities represent about 70% of the university sector in Finland measured by:

- Number of the students,
- Number of the degrees awarded,
- Number of faculty and staff and or
- Funding.

1. All Finnish universities are public. They receive their funding partly from the state budget and partly for their research and development from external sources. The education towards Bachelor, Master and Doctoral degree is free of charge, tuition and other expenses in Finnish universities.
2. The universities represented in the survey include all academic disciplines as defined by the survey:

Figure 5. Academic disciplines represented in the survey



3. All Finnish universities are working towards the implementation of the Bologna Process. The universities introduced in the beginning of the academic year 2005-2006 the 3+2 year degrees structure as well as the ECTS for defining the student work load. The other aspects of the Bologna Process, like the quality assurance and accreditation as well as the mobility are still under development.
4. The number of students of the survey universities in degree programs is as follows:

Table 1: ELUE survey universities and their degree students

University	# of students
Åbo Akademi University	8000
Helsinki University of Art and Design	1792
Lappeenranta University of Technology	4500
Sibelius Academy	1298
Tampere University of Technology	12333
Theatre Academy of Finland	369
Turku School of Economics and Business Administration	1700
University of Helsinki	38000
University of Kuopio	5500
University of Lapland	5000
University of Oulu	15000
University of Tampere	12700
TOTAL	106192

The continuing education programs have students as follows:

Table 2: ELUE survey universities and their continuing education students in

University	# of students
Åbo Akademi University	10000
Helsinki University of Art and Design	1300
Lappeenranta University of Technology	1500
Sibelius Academy	601
Tampere University of Technology	2703
Theatre Academy of Finland	622
Turku School of Economics and Business Administration	600
University of Helsinki	16000
University of Kuopio	3200
University of Lapland	9000
University of Oulu	-
University of Tampere	16000

There are no fees to degree students. The fees on continuing education varies from the totally subsidised education i.e. the fee is 0 euros to the extensive MBA programs where the fee can be over 20000 euros. It is therefore difficult to define the average fee for continuing education.

5. The number of students in various formats of education i.e. in traditional, ICT enhanced, distance and blended is extremely difficult to examine. The results from the survey shows the following:

Table 3: ELUE survey universities and percentage of students in various forms of education

Univeristy	Traditional Learning (%)	ICT enhanced learning (%)	Distance learning (%)	Blended learning (%)
Åbo Akademi University	10	60	10	20
Helsinki University of Art and Design	70	100	5	25
Lappeenranta University of Technology	20	60	10	10
Sibelius Academy	100	50	5	20
Tampere University of Technology	60	-	-	40
Theatre Academy of Finland	-	100	-	10
Turku School of Economics and Business Administration	25	40	5	30
University of Helsinki	49	42	9	-
University of Kuopio	100	48	-	-
University of Lapland	-	-	-	-
University of Oulu	70	20	5	5
University of Tampere	98	98	20	70

The results give a lot of room for interpretation and speculation. It can be concluded that in some universities ICT enhanced learning is considered to be also ‘traditional’ education. The term ‘blended’ learning might be commonly used only among the education specialists and not necessarily among all involved in eLearning and virtual university activities.

The survey questions were answered by people heavily involved in the eLearning activities with maybe very dim view on the traditional academic education and actually its scope and breath at the university.

6. The teachers at the Finnish universities have several types of contracts with the university. According to the survey results majority of the number of the teachers are civil servants:

Table 4: ELUE survey universities and the teacher categories

University	# of Civil servants	# of Contract employees
Åbo Akademi University	330	40
Helsinki University of Art and Design	148	0
Lappeenranta University of Technology	200	40
Sibelius Academy	165	0
Tampere University of Technology	-	-
Theatre Academy of Finland	40	-
Turku School of Economics and Business Administration	110	40
University of Helsinki	3575	-
University of Kuopio	395	-
University of Lapland	283	-
University of Oulu	500	800
University of Tampere	700	-

The classification of the university employees is under a reform right now. In the new system of salaries and benefits the worker are divided into two major categories the bigger one being the teaching and research staff and other being the ‘others’. The ‘others’ include administration, technical support and similar whereas the teaching and research staff include all those who carry out the academic work. Some units have adopted ‘everybody teaches’ practice, which means that all academic staff are teachers even their position is project manager or researcher or similar non-teaching position.

The surveys results show how the teachers use their time and efforts in various formats of education:

Table 5: ELUE survey universities and the work load of teacher categories

University	1	2	3	4	5	6	7	8
Åbo Akademi University	90	90	70	70	20	20	50	50
Helsinki University of Art and Design					-	-	-	-
Lappeenranta University of Technology	20	0	60	-	10	-	10	-
Sibelius Academy	100	-	20	-	5	-	10	-
Tampere University of Technology	60	-	-	-	-	-	40	-
Theatre Academy of Finland	90	-	-	-	-	-	10	-
Turku School of Economics and Business Administration	35	5	30	10	5-	12	3	-
University of Helsinki	49	-	42	-	9	-	-	-
University of Kuopio	100	-	25	-	-	-	-	-
University of Lapland	-	-	-	-	-	-	-	-
University of Oulu	70	-	20	-	5	-	5	-
University of Tampere	98	-	98	-	5	-	35	-

#	Description
1	The percentage of civil servant teachers in the university concerned by traditional learning
2	The percentage of contract teachers in the university concerned by traditional learning
3	The percentage of civil servant teachers in the university concerned by the ICT-enhanced face-to-face learning
4	The percentage of contract teachers in the university concerned by the ICT-enhanced face-to-face learning
5	The percentage of civil servant teachers in the university concerned by the Distance learning
6	The percentage of contract teachers in the university concerned by the Distance learning
7	The percentage of civil servant teachers in the university concerned by the Blended learning
8	The percentage of contract teachers in the university concerned by the Blended learning

Dividing the work between the teachers is a complicated issue as well it is complicated to divide the time between various formats of teaching and learning. These results must be interpreted with great care since, they are just estimates and prepared by one or two individuals at each of the universities. The results represent only the views of those answered and can be rather far from the reality.

University eLearning Policy

All Finnish universities have developed an e-learning policy during the years 2001 and 2005. The policy formulation actions were part of the annual planning agreements between the individual universities and the Ministry of Education.

Some universities have already revised them based on the extensive eLearning work. In all universities the policy includes the membership in the FVU. This implies that all Finnish universities are member of at least one e-learning consortium.

The result from the survey showed that the amount of consortium membership varies from 1 to 30 consortiums. The Finnish Virtual University is based on collaboration, division of labour, shared expertise of these member universities. It promotes online learning and teaching and develops compatible information infrastructures. In the FVU framework, universities participate in the national collaboration, and in addition, each member university has a special unit to promote and support online learning and teaching locally. These units may be educational technology centres, learning centres or other locally relevant units. The idea to develop a national virtual

university came from the universities themselves and also from the Ministry of Education's Information Strategy for Education and Research, 2000-2004.

This strategy forms a ground for development of e-learning practises in Finland. The main objective of the strategy was that *“by 2004 Finland should be among the leading countries in knowledge and interaction. The success is based on the citizens' equal possibility to study and develop their own abilities and to broadly use databases and educational services”*.

The implementation of the strategy has been assessed in the Ministry of Education's Education and research information society report 2004-2006 by using the following points:

- the citizen skills of the information society,
- the training of teaching staff,
- the training of information industry and digital communications professionals,
- the development of virtual education in universities and the virtual school (the Finnish Virtual University, the Finnish Virtual Polytechnic, the Virtual School project),
- the research of learning environments (Life as Learning –research program),
- the designs of the information technology, digital study materials (for the educational institutes in the Edu.fi service, Virtual Polytechnic portal and for the Finnish Virtual University portal).

This strategy forms a ground for development of e-learning possibilities in Finland. Since all Finnish universities are part of FVU, they are at least part of one e-learning consortium.

The results weakly show also that the collaboration of the Finnish universities in eLearning issues is still very much local or national. No significant international (EU or wider) collaboration has taken place yet.

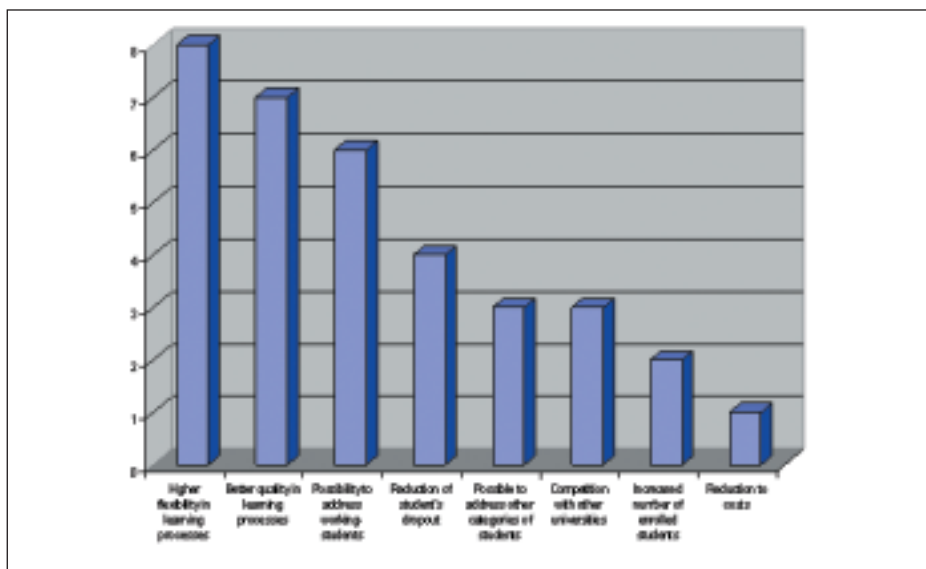
Also the level of eLearning strategies at universities are at rather low levels. This indicates that eLearning is still more an individual driven than an organisation driven activity in these universities.

The number of programs and courses offered in the form of ICT enhanced or blended is still rather low. The survey does not give accurate picture of the situation. Not even the Finnish Virtual University portal can draw the full picture even slightly more comprehensive than the survey. The FVU portal has a few hundred courses but no full programs in its data base as fully or

partly eLearning delivery. The universities deliver some tens of thousands courses annually a few hundred eLearning courses is than 1% of the total.

ELUE survey reveals several reasons for using e-learning (Fig 6).

Figure 6. Objectives pursued through the use of e-learning.



For most respondents the reason is to increase flexibility in learning processes. This has been the dominant factor in the Finnish eLearning and virtual university developments, when justifying the investments in eLearning. There is not yet sufficient research on how well this objective has been reached by eLearning. On the other hand the inflexibility has not been reported to be a significant problem in the Finnish HE systems. It seems that eLearning has been seen by various actors as a new opportunity for something.

The second most important reason for using eLearning was better quality of teaching. The quality issue has been on the HE agenda in Finland for several years. The Finnish Virtual University and the Higher Education Evaluation Council have held discussions about including the eLearning into to the scope of quality evaluations. There are no real indications that the education in Finnish universities is of poor quality and therefore here would be need to improve it by introducing the eLearning. On the other hand there has been a concern about the quality of the eLearning at the universities. To assess and to improve the eLearning quality several national and EU wide initiatives have been launched. Results from these can be expected in the next year or so.

Majority of the universities stated the possibility to address working students as one reason for the use of e-learning. In some disciplines depending on the economic currencies students tend to spend more and more the office hours working in companies as part-timers or even full time. This is very common in ICT sectors of the industry. These students also understand the possibilities of ICT in all areas of life including education. They are a good target group of eLearning delivery. At the same time however, they are working with world class companies with world class ICT solutions and products which also sets the standards and levels of eLearning arrangements.

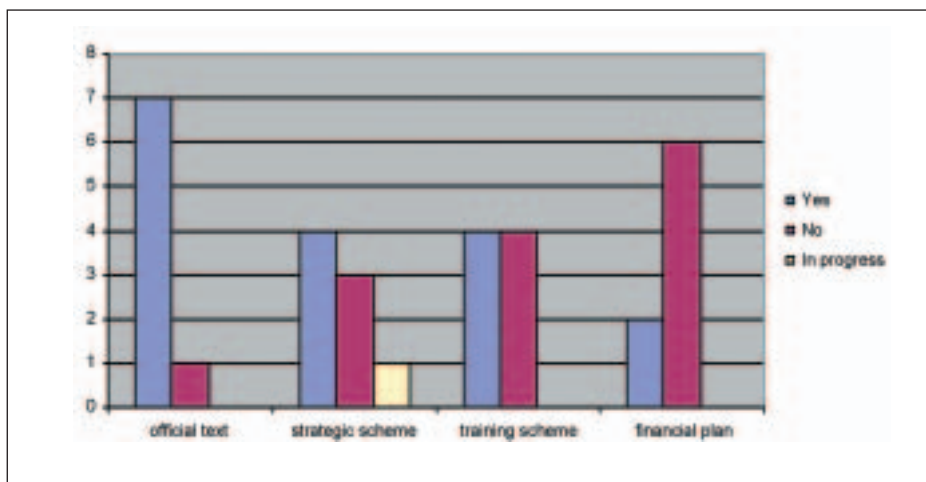
Furthermore, reduction of students' dropout and competition with other universities is mentioned by the four recipient universities. This type of motivation again is more based on feelings than facts measured by research, surveys, etc. Universities have studied the reasons for dropouts and majority of the reasons have something to do with the mismatch between the education and the student. In Finland in many areas the number of student intake has been increased beyond what the quality of students requires. This has led to situation where traditional (or maybe any kind) education is not sufficient for some students to learn the basic knowledge areas required by the university. Several so called bottle neck courses have been created, because the skill levels required to pass the course is much higher than a large number of the students. eLearning might help in these cases but it might not as well. Competition between universities in Finland is about new students, when universities recruit new high school graduates. Their selection is based on partly rational (distance from home, employment opportunities, friend is studying already there, ...) and partly irrational (image of the school, ...) reasons. eLearning activities do have much impact yet on the rational reasons and there is still a way to go with the irrational one too. One university offers students a leased laptop PC with all necessary SW and service for eLearning and other work as well. The rational behind this decision was and is that that university wants to give an attractive look to the new students. A similar solution is possible in all campus areas, but this university took the initiative to promote the idea and that way improve the image of the university in the eyes of the new students.

Other reasons are indicated as following: possibility for national and international teaching collaboration with other universities and use of e-learning as stated in Ministry of Education's strategy. The teacher collaboration is not the strongest asset of the Finnish university sector. The NIH (not-invented-here) syndrome is rather strong. There are even some international studies about national performances showing that Finland as a nation is not very good in applying technologies developed by others. When this feature is connected to

the academic work environment is will come even stronger. Universities by nature would like to research everything by themselves. eLearning definitely would create new possibilities for national and international collaboration.

Figure 7 illustrates the strategic acts that the universities have done to support e-learning.

Figure 7. Strategic acts of the universities to support e-learning.



Almost all of the universities have produced an official text for supporting their e-learning development. Four universities have produced a strategic scheme, three have not and one university is in progress for producing a scheme. The Finnish Virtual University has produced a Strategic Plan. This plan is discussed at all universities and accepted by the consortium. This strategy has been even revised once during the short history of the FVU. Technically this means that all Finnish universities have a written strategy document about eLearning. All universities have also produced from the request by the Ministry of Education a strategy of ICT utilisation in university education. These documents are produced and discussed at the university level. Some faculties, departments and other units have also produced their own strategic proposals. Most of the university level documents are stored and can be reviewed from the FVU strategy services web site.

Training scheme for teachers has been produced in four universities whereas four universities have not produced such a scheme. The Finnish Virtual University has supplied all university teachers eTeaching training at several levels: introductory courses, courses for beginners and more advanced

teachers. These courses are available to teachers in all universities and many have utilised them during the years. Teacher training is one good example of areas where universities could collaborate. Especially in the area of eLearning when the training can be more flexible regarding the time and the place of study universities could utilise teaching from other universities.

Financial plan to motivate teachers has been developed in two universities and six universities have not developed financial plan for the cause. For teachers' career advancement purposes e-learning activities have been taking in to account in four universities and three universities have not taken account e-learning activities, but in one university the plans have been made for this purposes. The Finnish universities have adopted so called 1600 hrs of work per annum to teachers. The planning of the work should takes place every year. In this planning also the eLearning activities should be taken into account. So far the eLearning movement in Finland has very much relied on those enthusiastic teachers who mostly voluntarily develop their skills, materials and tutor their students. In order to become organisational practise eLearning must be included in the overall planning, rewarding and in all aspects of the teachers' work.

Teachers can purchase hardware equipments in six universities and two universities are in progress for producing a plan for this reason. One university indicated that students are also allowed to purchase hardware equipments and two universities are in progress for making the plan that allows students to purchase hardware equipments.

All the respondent universities indicated that teachers and students can get a university e-mail address. The Finnish Universities collaborate closely with Scientific Computing Services (CSC) Ltd, which is a state owned service provider of various ICT services to the higher education (HE) institutions as well as some state research institutes. CSC provides the Finnish HE institutions with fast network connections (FUNET), which allows all faculty, students and staff in each of the universities to get an e-mail account.

Technical support is also offered for both teachers and students in all of the respondent universities. All universities have EDP department or similar to coordinate with CSC all EDP related issues. They manage some of the weak standardisation that takes place at universities.

Pedagogical support is offered for teachers in seven universities and for students in five universities. Training in use of ICT is organised for teachers in all of the respondent universities and for students in six universities.

ELUE survey explored also the research activities conducted in the field of eLearning. Five respondents have conducted surveys and inquiries, three have done assessments and five have conducted scientific research.

No studies have been done of the cost trends, students work time, reduction of dropout rates or possible risks caused by e-learning development. The FVU has made several proposals to that direction. So far no research has been carried out nor any concrete plans towards that type of research have been made.

One respondent university have conducted studies on space and time flexibility and the conclusion of the study indicates that flexibility is increasing. Also studies of teachers' work time have been done in one of the respondent university, and results conclude low reduction.

Degree courses individualization has been explored in one of the respondent university and results indicates low increasing.

One university has explored e-learning acceptance among teachers and study reveals high acceptance.

Students' acceptance has been explored in one of the universities and results indicate high acceptance.

Evolution of teachers' profession has been explored in one of the respondent university and the study concludes high evolution.

Encountered impediments have been explored in three of the respondent universities. The results of these studies reveals following impediments:

- low availability of the necessary skills (3 respondents),
- lack of an adequate acceptance at a cultural level (2 respondents),
- lack of adequate governance support (1 respondent),
- lack of adequate facilities (1 respondent), and
- teachers prejudice against e-learning (1 respondent).

In the open section of the questionnaire, several potential pitfalls of e-learning were indicated.

One responded voiced that it is possible that too much attention is paid to the technological aspects to the detriment of pedagogical risks.

Another concern was that, at the moment many support functions do not have a permanent status in the university organizations. Thus, there is a possibility that these functions will not be permanently established.

One respondent highlighted the differences in the use of e-learning between

the different departments in the same university. Some departments have a lot of e-learning courses and are engaged in active development in the field, whereas other departments have only few courses or, in the most extreme cases, not at all e-learning courses. Above this, in some departments there is plenty of expertise in the area and in others the development suffers because of lack of necessary expertise. Furthermore, it should be noted that within a single department the e-learning courses are typically driven by certain active teachers.

Four universities that had responded into this section of the questionnaire reported that they did not have legal problems concerning e-learning. The remaining four, who reported experiencing legal problems, reported that they were all related to copyright issues.

Financial Policy

The eLearning development in the Finnish universities has been funded from various sources. The major source of funds has been in the past years the special funding from the Ministry of Education in total of 9.1 M euros. The statistics in table 6 below from the year 2003 shows how these funds are allocated:

Table 6. The Ministry of Education funding to eLearning actions

University	University projects (€)	Network projects (€)	Total (€)
University of Helsinki	670000	757000	1427000
University of Joensuu	168000	468000	636000
University of Jyväskylä	336000	100000	436000
University of Kuopio	105000	47000	152000
University of Lapland	168000	168000	336000
University of Oulu	336000	390000	726000
University of Tampere	336000	384000	720000
University of Turku	350000	929000	1279000
University of Vaasa	168000	60000	228000
Åbo Akademi Academy	200000	0	200000
Lappeenranta University of Technology	168000	0	168000
Tampere University of Technology	330000	168000	498000
Helsinki University of Technology	336000	772000	1108000
Helsinki University of Economics	110000	84000	194000
Swedish University of Economics and Business Administration	84000	0	84000
Turku University of Economics	92000	84000	176000
Academy of Fine Arts	53000	0	53000
Sibelius Academy	61000	168000	229000
University of Art and Design Helsinki	330000	0	330000
Academy of Dramatic Art	120000	0	120000
TOTAL	4521000	4579000	9100000

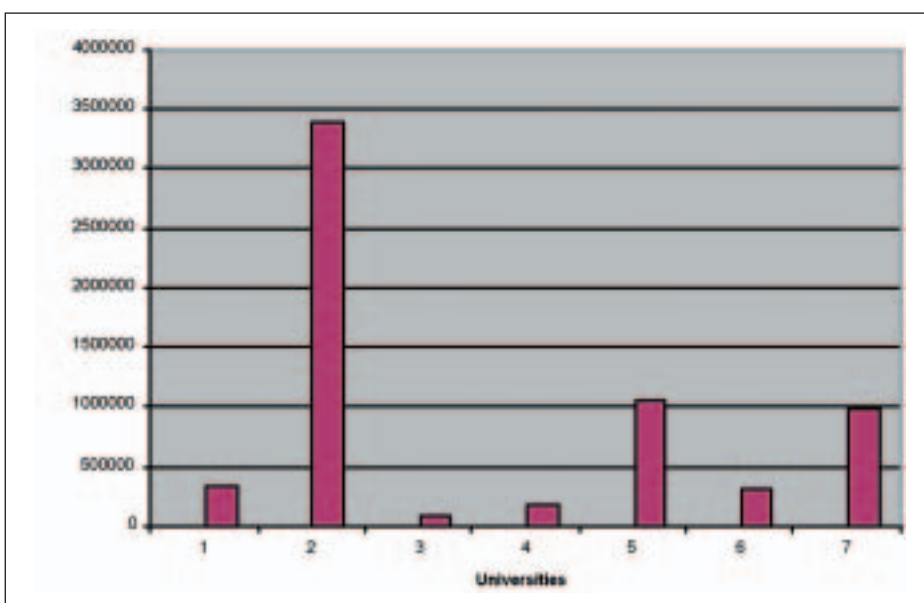
In addition to the amounts above MoE has supplied funding to some other development and related projects outside this general framework.

The universities themselves have allocated some money both at the university as well as faculty and department levels to the eLearning activities.

Some universities have also participated in international eLearning projects, when partly the funding has come from various EU funds.

According to the survey the overall annual budget dedicated to e-learning in Finnish universities ranges from 3400 000 euros to 180000 euros (Fig 8).

Figure 8. Overall annual budget dedicated to e-learning in Finnish universities.



Only three universities indicated its' share of the overall budget of the university. In one rather big university it was 5 percents of the total budget whereas in two smaller universities it was 4 and 1 percents. It seems that the share of the total budget dedicated to e-learning does not depend on the size of the university. There are examples of both small and large universities that are investing significantly to e-learning and vice versa. The main funding source for e-learning was the state and only a marginal amount of the budget was covered by the European Union or regional sources.

Although the universities offer several types of e-learning services for the students (in IT, in documentation, in educational documents), these do not lead to extra costs to students in any of the Finnish universities.

Some of the respondents indicated reasons for engaging in e-learning. For one university this action was a strategic choice. The university had decided to enhance e-learning by its policy and supported financially e-learning initiatives. Another university saw the potentials of e-learning in better quality of learning. Yet another university underlined the importance of multiple teaching methods and possibilities to manage large student groups via e-learning. One university also told that e-learning was a trend that they needed to follow.

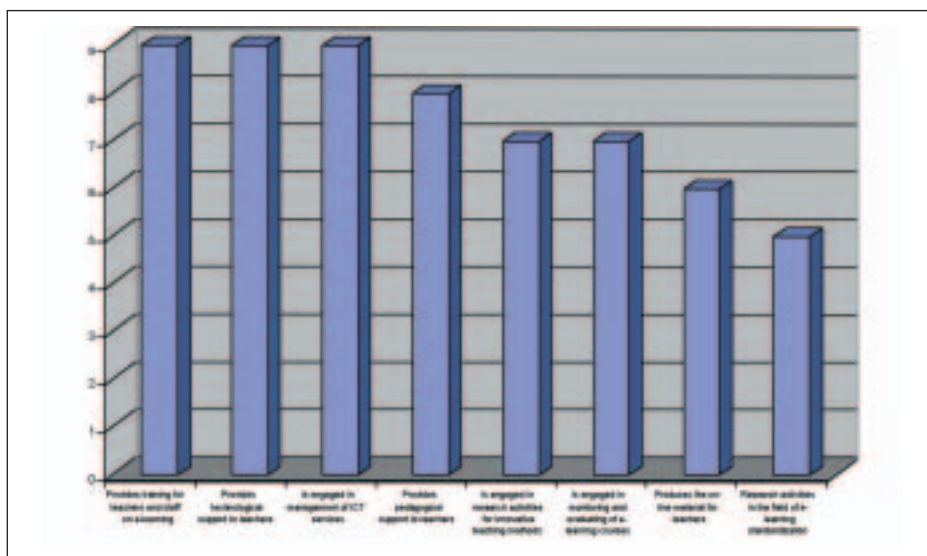
Organization

Among the nine universities that had responded into this section of the questionnaire there were eight in which there were a whole unit dedicated to e-learning activities of the university. In addition to that, several universities had other units whose work supported their e-learning activities.

In one university the organizational model was a shared model, which means that there are several collaborating units who share the responsibility of the e-learning activities. Although there were not a unit devoted to e-learning there is a coordinating function in this university to organize the responsibilities among the different units working in e-learning.

The figure 9 illustrates the functions of the e-learning unit(s) in different universities. The result illustrates that in Finnish universities the most emphasised functions include the teacher training in relation to e-learning, maintenance of ICT services and technological support for the teachers.

Figure 9. Functions of the e-learning units in the Finnish universities



Note. The items in figures 9 (from the left to the right) are:

Provides training for teachers and staff on e-learning; provides technological support to teachers; is engaged in management of ICT services; provides pedagogical support to teachers; is engaged in research activities for innovative teaching methods; is engaged in monitoring and evaluating of e-learning courses; produces the on line materials for teachers; research activities in the field of e-learning standardization.

The person in charge of eLearning varies considerably. The respondents explained the responsibilities by the following:

- Management team
- Planning officers
- Project Manager
- Vice Rector with manager at the student services
- Net producer
- Variable – for instance IT manager
- A responsibility area of the department of administration. eLearning is one area with annual financial, targets and other planning and control elements.
- Manager of the Learning Center
- eLearning is not a separate issue, but part of normal responsibilities at all levels of the university. Only limited amount of resources allocated specifically into eLearning.

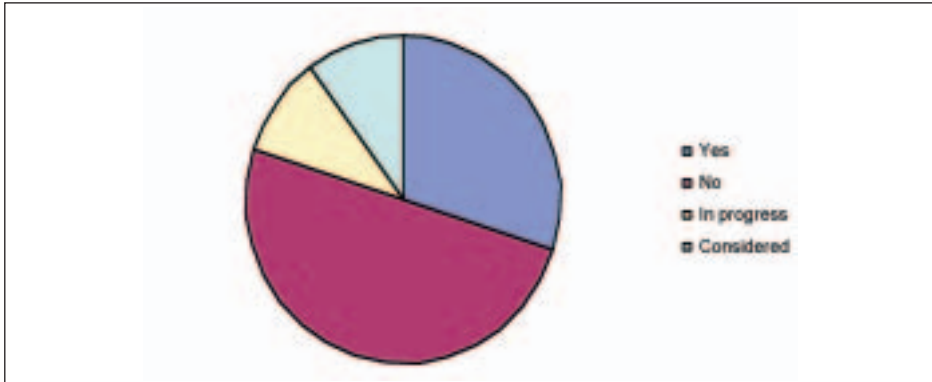
This example shows that eLearning probably has not yet found its place in the academic work in Finland. One could say that this indicates that the Finnish university eLearning maturity is at very early phases.

In basis of the data it seems that the support functions for e-learning take several forms in the Finnish universities. Some universities offer support via the faculties, which means that in each of the faculties there is a person working for pedagogical and/or technical support of e-learning. Other universities have a unit with different experts working together to support teachers both pedagogically and technically. Some of the universities had also professionals for producing on-line material.

Five of the nine universities that have responded into the questionnaire have set a training process to the teachers of the university. In three universities there is e-learning training process for non-teachers and in three universities for the students as well.

Figure 10 demonstrates the e-learning contents databases in the Finnish universities. Most of the universities did not have a contents database. Of the existing databases only 2 were shared with another university.

Figure 10. E-learning contents databases in the Finnish universities



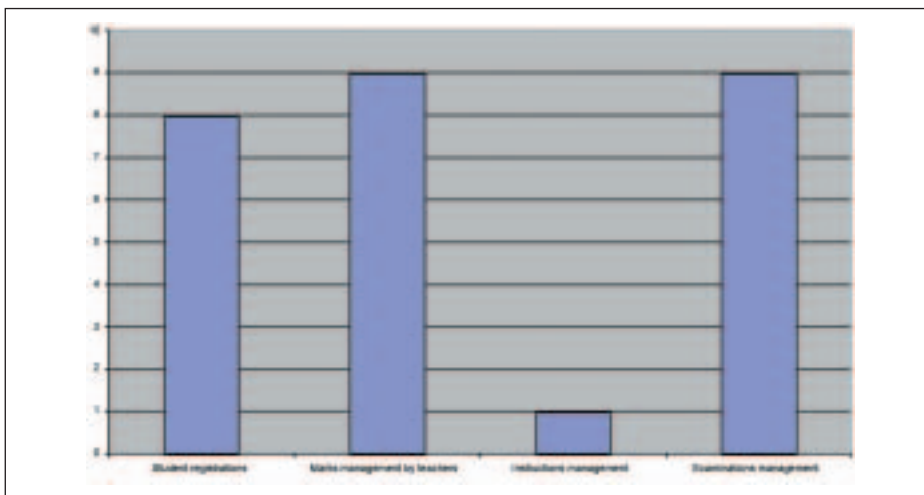
In eight of the nine universities there were an administrative management in an e-learning system.

Figure 11 demonstrates the features of this system in each of the universities. Many universities are using the same Finnish national on-line system, called Web-oodi, for student management. The system takes of main student administration tasks like:

- university registration by semesters
- registration to courses and exams

- student records on performance
- transcripts
- statistics for the administration and to the Ministry of Education.

Figure 11. Features of the on-line administrative management.



Course Data

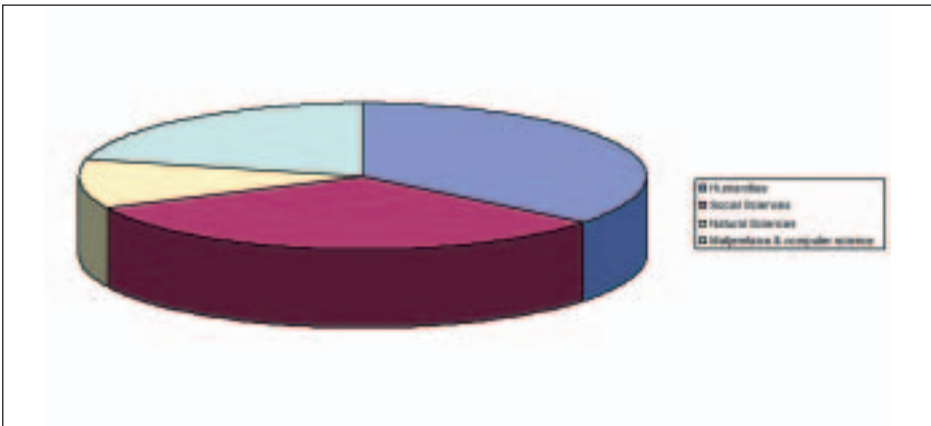
The questionnaire submitted to universities offered them the opportunity to describe individual courses whose teaching supply was affected by using, with varying degrees of emphasis, information and communication technology (ICT). This is a strongly heterogeneous world both from the point of view of educational supply and from the point of view of the typology of the use of ICT that is adopted (which ranges from authentic e-learning to the supplementary use of technologies that flank and support the stages of presence teaching only at a marginal level).

The survey resulted data only from 35 courses in 9 universities. The number is much too little to make any statistical analysis but however it gives some sights into the eLearning education in the Finnish universities.

One important aspect here is that most of the courses are not meant to regular students. The courses of this survey are organised in connection with open universities, when the students are typically part-time students and in many cases full time employed. The other significant group in the case of these courses are the teachers of the universities.

The disciplines represented by in the survey courses are as described in fig 12.

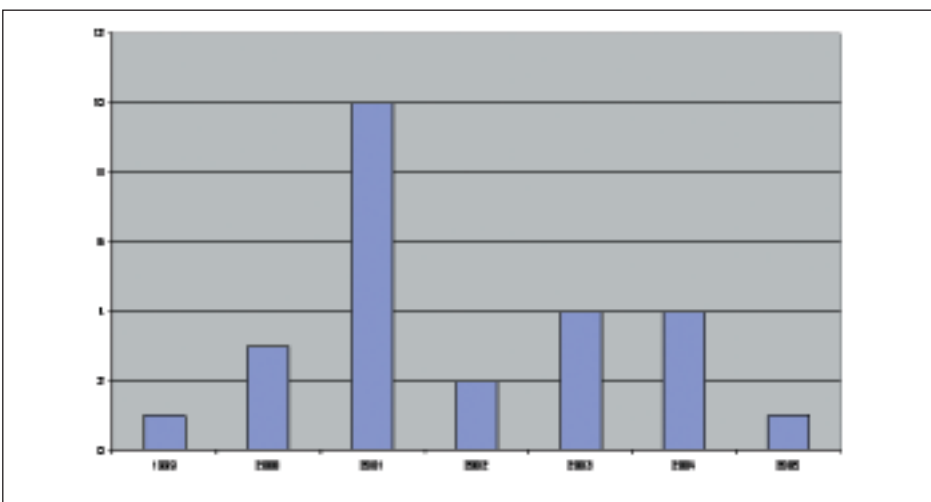
Figure 12. eLearning Course disciplines



Answers to the question “Since when have the ICT or e-learning services of the course been available” shows some aspects of the Finnish eLearning developments in the universities. In the turn of the century the Finnish Virtual University concept was launched and at the same time the extra funding to eLearning developments was introduced (see Table 6). A good part of the funding has gone to further development of certain programs and courses and after start not that many new activities have been started.

Even the results are very limited by number of answers and are not representative; they weakly indicate the developments within the Finnish Virtual University context, showing that the first year of the century was very active in starting new things in eLearning.

Figure 13. Starting year for eLearning courses

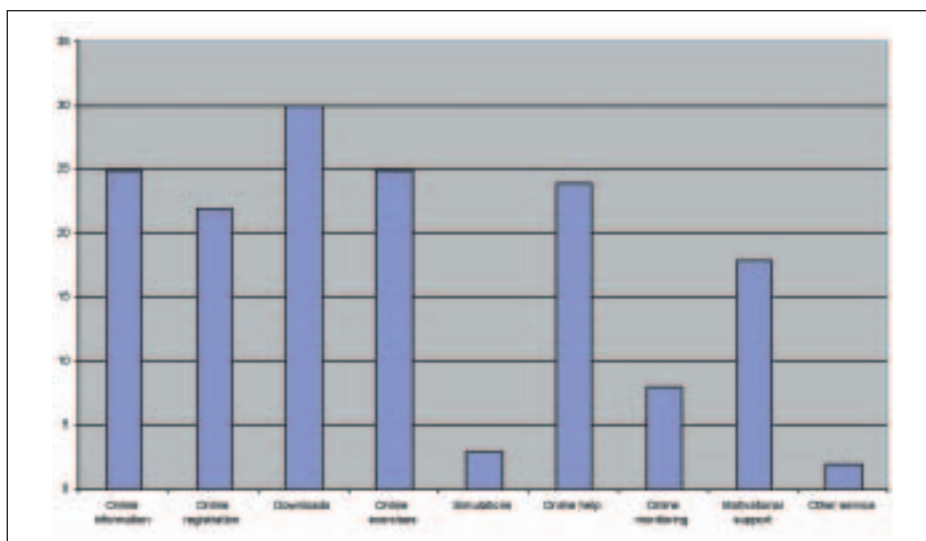


Most of the courses that were surveyed had implemented some basic services (Fig 14). Most common service in this group of courses was the downloads, which indeed is the first service to be considered to be used. Or one could say that because of some common course material is in electronic format (text, slides, etc.) it makes sense to consider delivering and sharing those material using electronic means: e-mail or a web service.

On line information sharing is equally understandable being a favourite service, but the great percentage of the courses where on-line exercises are used is a positive surprise.

The course arrangements vary much between universities and between courses as well. About 10% of the courses were based on the agreement with a national committee, 12% on the agreement with the rector, 3% on the agreement with administration, 12% on the agreement with the scientific committee of the university and 6% was based on no agreements at all. However the most important agreement based on this survey are the agreements with the participating teachers. Over 50% of the courses had this in place. Also an example was about agreement with the department in charge of the discipline covered in the eLearning course.

Figure 14. Features of the eLearning courses



The eLearning courses seem to be arranged in connection to other projects and activities. The surveys indicated that that over 2/3 of the courses were part of larger project within the university, 2/3 within the unit and about 40% within the faculty.

The survey did not give much information about the financial arrangements of the courses. That seems to be one weak point in the Finnish eLearning developments at least in the university sector.

On-line contents are typically produced within the university. Totally own production is about 85%. Material from others 5% and partly own and partly purchased is 10%.

The materials are typically for internal use only. That is the case about in 70% of the courses. In 27% of the cases the materials are available free of charge and in the rest, 3% of the case the materials have been sold to some extent already.

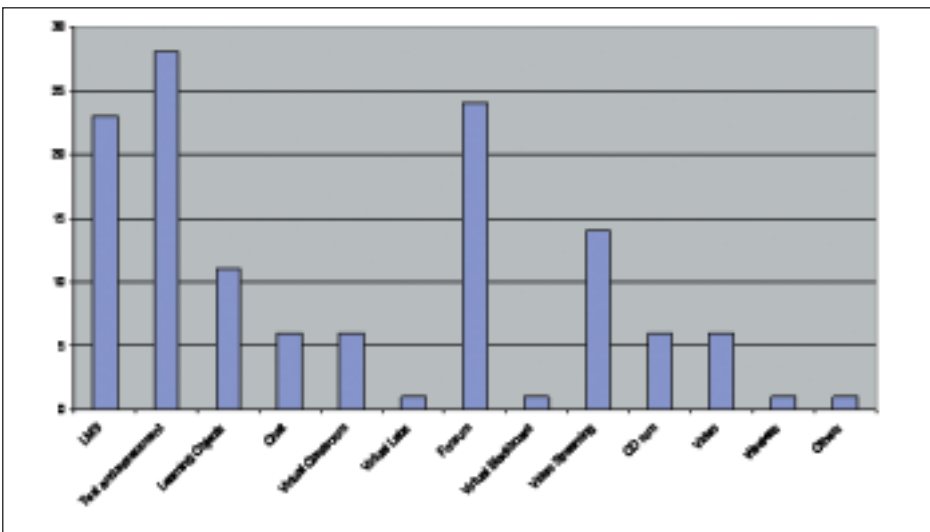
The online offering does not have effect on the student fees when the teaching is connected to degree (Bologna) courses. However the continuing education sector reports some effects on the student fees.

In addition to teaching in connection to the courses there are other services available like:

- enrollment about 90%
- administrative services about 70%
- communications 100%
- digital library about 10%

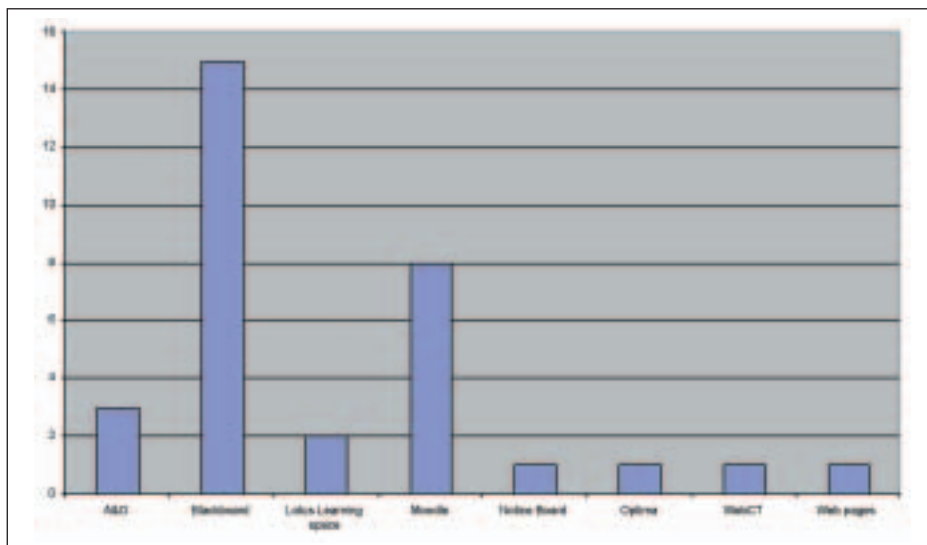
Tools that are used in those courses are listed in Figure 15.

Figure 15. Tools used in connection of the courses



The learning management systems used by the courses are in most cases (55%) bought systems. Self produced and open source systems are equally popular (about 22% each). Most common platform seems (Fig 16) to be Blackboard.

Figure 16. Learning platforms used in connection of the courses



Main weaknesses faced in connection to the used learning management systems were the rigidity and the cost of the system. Other, not so big problems were the technical difficulties for teachers. Smaller difficulties were seen in the integration and technical aspects seen by the students.

Conclusion

The aim of the survey and this report was to describe the overall e-learning situation in Finland, including finance, policy and organization issues within universities. However, due to the lack of respondent this study doesn't fulfil these objectives. The answers come from universities who represent close to 70 of the universities in many measures, but due to the complexity of the survey it was not enough that one or two persons from these organisations take part in formulating the answers. It would have required a wider participation. This had been especially important in the case of collection survey data from the various eLearning courses. However the results from the survey draw a picture of the eLearning in the participating universities. With some expertise on eLearning, on university education and their combination

the results can tell some interesting points about Finnish eLearning developments in the universities.

Some trends and characteristics of the development in Finland can be highlighted. The reason to engage in e-learning activities seems to be the aim to increase flexibility and quality of teaching. To accomplish these aims universities need also a strong research activities and support for teachers working in the field.

Based on this survey, there is a need for improvement in research activities since the results indicate that there is no studies related to cost trends, students work time, reduction of dropout rates or possible risks caused by e-learning development.

The support functions for teachers and for studies are organized in most universities participating to this survey, by dedicating a whole unit to e-learning activities. This result is supported also by the Finnish Virtual University developments and organisation work among the member universities. Some universities had also other units whose work supported their e-learning activities. Furthermore, the result illustrates that in Finnish universities the most emphasised support functions include the teacher training in relation to e-learning, maintenance of ICT services and technological support for the teachers. It seems that at the moment the support functions in different universities are well organised. But since many support functions do not have a permanent status in the university organizations, the participants of this survey worried that there is a possibility that these functions will not be permanently established. This worry is commonly shared also among the Finnish Virtual University community, where many active people are currently hired by these temporally operated units.

For exploring e-learning activities, the multiple data sources are needed. In case of Finland, more detailed information could be gained by assessing e-learning with more intensive methods. Many qualitative research actions have taken place in Finland, but good quantitative research has still room. Only with quantitative figures the qualitative described structures and actions can be put into the perspective.

FRANCE¹

This final report is an abridged version (30 pages) of the original text (50 pages) handed in to the Italian coordination in January 2006.

Several sections dealing with methodological² and terminological³ issues of the survey have been removed as well as political and institutional information⁴ describing the specific national context of e-learning development in French universities. Such information is susceptible to give grounds to a more comprehensive, finer-grained comparison of results between the three countries.

The full report can be accessed on the site of *e-pathie* thematic programme (MSH, Paris). <http://www.e-pathie.org>.

The synthetic analysis of results includes 5 parts: a description of the corpus of the French survey; an analysis of the connection between policies and strategies in institutions; an identification of indicators of concrete implementation bringing to light their relation with the political intents of institutions; an analysis of the links between ICT implementation and didactical practices, as well as between tools and devices development and related research practices. The total aggregate amounts to 85 institutions, out of which 41 returned an answer.

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² Rationale of the conception and design of the questionnaire, practical conditions of data collection and consequences on statistical treatment.

³ Discussion of the multifarious, often ambiguous meanings and social usage in France of common words such as “e-learning”, “education”, “training” and more specific ones such as “dispositif de formation” (training system or programme or technical device).

⁴ Brief overview of the long French tradition of governmental incitation in the field of educational technologies.

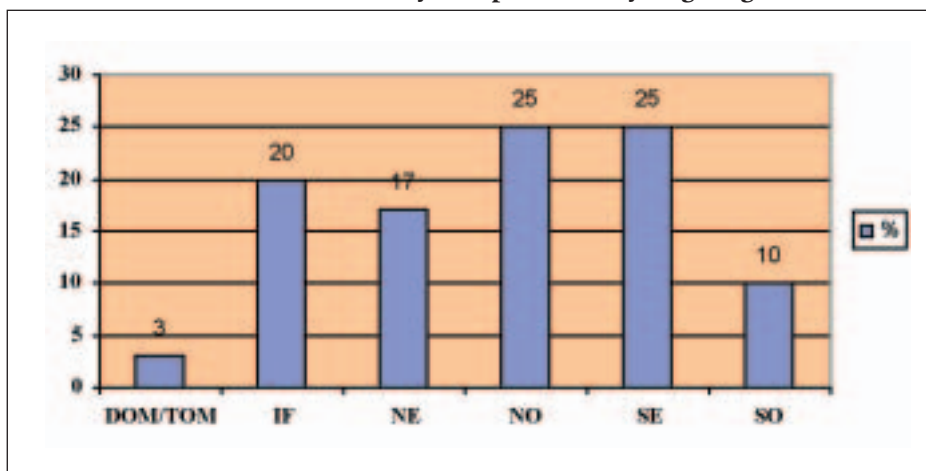
The corpus of the survey

Out of the 85 institutions contacted, 40 answered the survey, which represents 47% of the institutions concerned. This result is relatively satisfactory considering the national context (see full version) and is a representative of the total corpus as evidenced by the comparative study of both the territorial distribution of respondents and their different types.

A corpus of respondents representative of French academic geography

Back in 2004, the French National Center for Scientific Research proposed a division into 5 “inter-regions” with a view to participate in the establishment of a European area of higher education and research. They are: Isle of France (IF), North-East (NE); North-West (NO); South-East (SE); South-West (SO) to which departments and overseas territories (DOM/TOM) have to be added. In this new division, four larger regions appear comparable in terms of number of academic institutions (IF, NE, NO and SE) while two of them are in particular situations of border zones or territorial distance (SO and DOM/TOM) (chart 1).

Chart 1: Distribution of the survey’s respondents by large regions



The distribution of respondents to the ELUE survey is equivalent to the actual distribution of French universities on the territory, with the exception of a few drifts between South-East and South-West.

A corpus representative of the typology of French universities

In order to make more relevant comparisons between universities, the minister office in charge of higher education has set up a typology based on

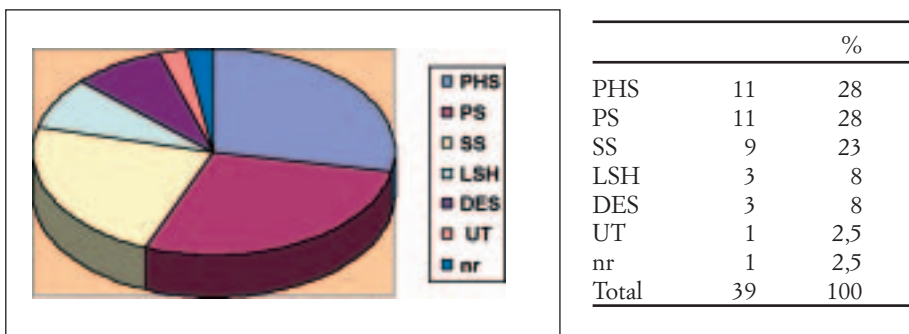
the identification of several criteria, in terms of organization and allocation of budget.

Six categories were thus retained:

- *Law and Economics* (DES) includes 8 institutions in France;
- *Literature and Human sciences* (LSH), 13 institutions;
- *Multidisciplinary save Health sciences* (PHS), 26 institutions;
- *Multidisciplinary Health* (PS), 20 institutions;
- *Sciences and Health* (SS), 15 institutions;
- *Technological universities* (UT), 3 institutions.

A second comparison was realized between the distribution of institutions on the national territory and the distribution of the various types of universities that completed the survey form (chart 2).

Chart 2: A distribution of the corpus of ELUE according to scientific domains



The above chart evidences two features: first, the representative quality of the universities that answered the ELUE survey is confirmed; second, an over-representation of the Sciences and Health sector and an under-representation of the Literature and Human sciences sector are evidenced within the respondents. This observation is coherent with previous researches (Albero, Dumont, 2002⁵; Thibault 2003⁶) that showed an unequal engagement in e-learning experiences according to disciplines. Health and Sciences appear to be clearly more committed than the average and Literature and Human Sciences clearly less so. This is confirmed by the

⁵ *Op. cit.*

⁶ Thibault F, 2003, "Coalitions sociales et innovation pédagogique : le cas du Réseau Universitaire des Centres d'Autoformation", in B. Albero (coord. by) *Autoformation et enseignement supérieur*, Paris, Hermès Science, pp. 193-218.

questionnaire through the various answers of faculties, Health and Sciences (among which Computer science) being more widely represented than Human and Social sciences.

A corpus of respondents already familiar with ICT issues

The Ministry of higher education has supported the use of information technologies for communication in universities ever since 1947 (radio, audiovisual and computer equipments) (Thibault, 2004⁷). In 1997, a strong policy was initiated through various measures of incitement (appointment of persons in charge of the whole ICT policy within each establishment; Government plan of action to promote an information society; Digital campuses and development of digital work tools for students).

The program “*Digital campus*” rested on the idea that universities had to associate in order to carry through this kind of initiative. The program supported the creation of *consortia* open to the participation of private sector contributors. Thus, for a university, the fact of *leading* a consortium or contributing as a *partner* was an actual indicator of its commitment in the field. In this context, knowing how many respondents were actively involved in a Digital Campus, either as leaders or partners could be informative. Chart 3 and chart 4 show that 60% respondents were active in as leaders in a *Digital Campus* (as compared with a national average of 47%) and 80% as partners (national average: 71%).

Chart 3: Distribution of the respondents in relation to their leading position in at least one Digital Campus

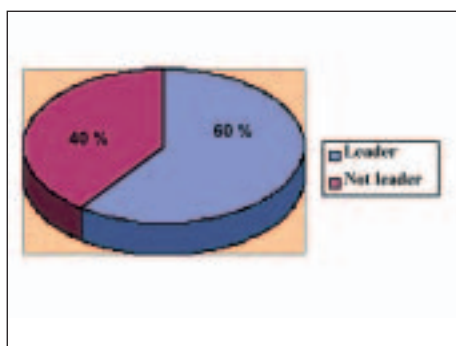
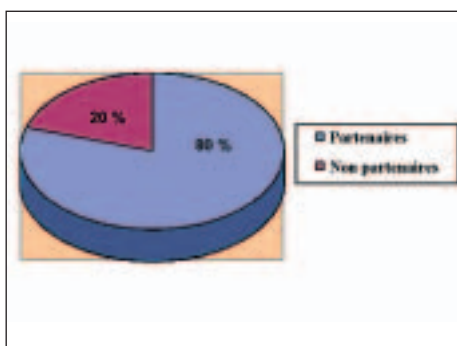


Chart 4: Distribution of respondents in relation to the position of partner in at least one Digital Campus



⁷ THIBAUT F, 2004, “*L’université et les technologies de l’information et de la communication: explosions, errements et doutes*”, dans les actes du Colloque “Médiation et ingénierie des connaissances”, 14-16 décembre 2003, Marseille. On line on site: <http://www.e-pathie.org>

The corpus of respondents is also representative regarding the rate of e-learning services in the establishments (43% compared with 40% at the national level). A recent study (Thibault, 2005⁸) underlines this low commitment to ICT of university distance-learning services. The study showed that, in a majority of cases, the medium mainly used still was paper or audiocassette (or CD) and the most common means of communication was the postal service plus the phone in some cases. Altogether these services treated 30000 students in 2005, which matches the average number of students in a big French university.

The prominence of traditional learning⁹ modalities and a trend to overestimate ICT pedagogical use

Only 56% of respondents answer the question about learning modalities (chart 5), yet it is interesting to notice that to their opinion, the *traditional modalities* of lecturing remain predominant¹⁰ (more than 85%). Modalities taking into account the “distance” feature are a very low, not to say negligible minority (about 1%) whereas a face-to-face + ICT type of learning seems to be spreading (11%). The comparison of the 13% institutions that provided factual data on the subject¹¹ with the estimations provided by other respondents (44%) enables to bring out an interesting phenomenon: namely the tendency by persons in charge *to overestimate the implementation of ICT within their own institution*.

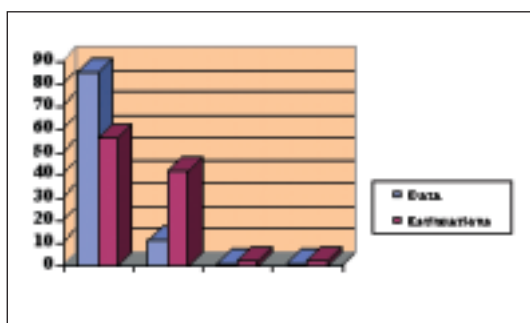
⁸ F.THIBAUT, 2005, *La Fédération Interuniversitaire d'Enseignement à Distance. Ses membres et leurs activités en 2004*, survey undertaken in a collaboration framework with FIED, 52 p. On line on site : <http://www.e-pathie.org>

⁹ From this section, the analysis of the corpus of respondents takes 39 institutions into account for reasons previously explained.

¹⁰ This aspect was examined on several levels in a previous survey (Albero, Dumont, 2002), *op. cit.*

¹¹ 22 institutions on 39 give an answer: only 5 establishments base themselves on factual data and 17 rely on estimated data.

Chart 5: A comparison between modalities of learning as described from actual data and as estimated by respondents



Modalities	Data	Estimation
Traditional	85%	56%
ICT-enhanced face-to-face	11%	42%
Distance	2%	1%
Blended	2%	1%
Totaux	100%	100%

Chart 5 highlights two unexpected results: the predominant pedagogical patterns conveyed by ICT and a tendency to overestimate ICT function in learning activities whenever no factual information is available. These results are confirmed by large scale surveys conducted in some universities (2003¹²). They will have to be considered with the utmost attention when “e-learning” observatories are set up. If the objective is indeed to get reliable data, it shall be important *to provide for modalities of observation richer* that the sole questionnaire sent to people engaged in such or such activity.

Various staff contributing to courses

The teaching staff in French universities can be categorized in different ways. One of the typologies distinguishes between civil servants who hold tenure and contract agents who may have the same qualifications but have not got admission through competitive entry examinations. Observations in the field (Albero, 2000; Thibault, 2002) led to the assumption that the introduction of ICT in higher education often goes with by the recruiting of temporary agents under contract as they are better trained in ICT than most academics. Several items in the form of the ELUE survey were designed to test this assumption. In fact, the numbers of contract agents as given by the universities are largely in a discrepancy with the official ones. They indicate a noteworthy surplus of the declared numbers in that category, a fact that does not come as a surprise but compels caution given the importance of the difference. It thus appears that, although we are unable to precisely quantify the trend, one can actually surmise that all modes of training using TIC tend to generate an increased recruiting of contract agents.

¹² These surveys led in South-East universities are available on line on site: <http://www.fing.org/>

Political projects and institutional strategies

The way questions concerning policy and institution strategy are handled in the survey shows that ICT development involves several levels - international, national, regional and local - of planning, decision-making and management, not to mention the conducting of negotiation down to their actual realization.

National political projects and projects in local institutions: the international dimension

The decision to subsidize ICT development through projects subjected to conditions was taken by the Ministry in 1998. With the program “Digital campuses” the number of partners in the consortium became an important criterion to select applicants. In 2003, through the program, “Digital University in Region” the ministry promoted a new kind of *regional consortia*.

Chart 6: Institutions taking part in a consortium

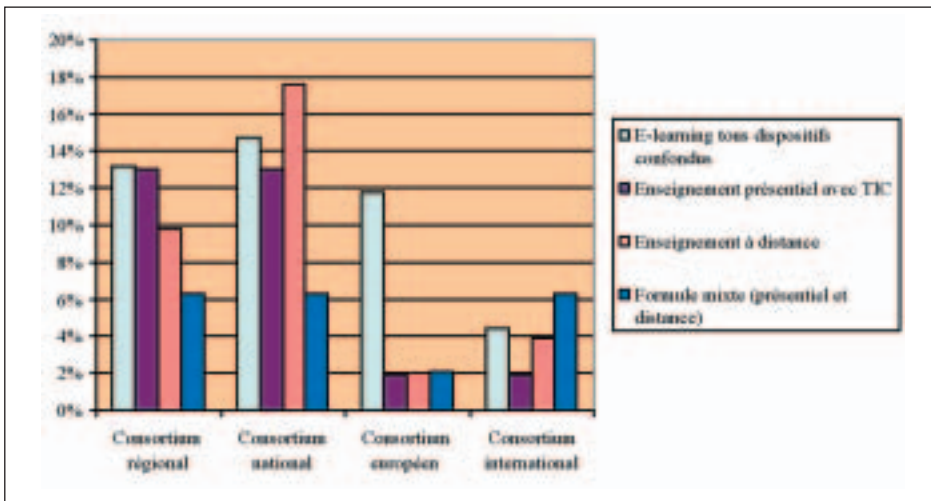
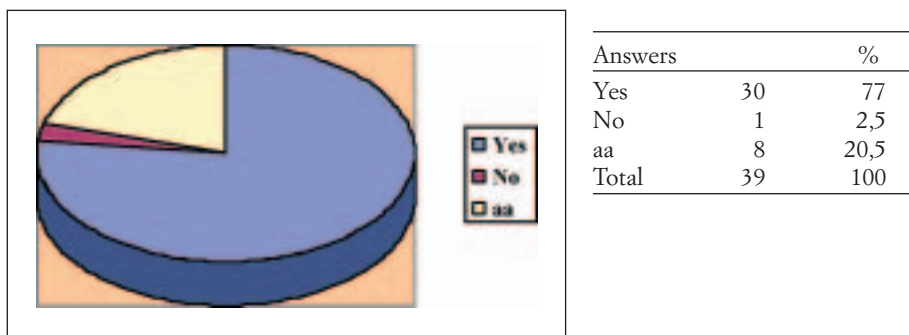


Chart 6 shows the results of the policy as *consortia* now concern every learning modality of ICT use. The weight of the different levels of consortia (regional, national, European and international) is consistent with the financial support granted to each (three times more important for national consortia than for regional ones) and with their specific difficulties of implementation.

Local level: a policy strongly oriented by the national level and sometimes blurred by the division into scientific and disciplinary areas

Among institutions, more than 80% claim they developed or are on the verge of developing a specific policy in favour of “*e-learning*” development (chart 7).

Chart 7: Existence of a policy aiming to develop “*e-learning*”



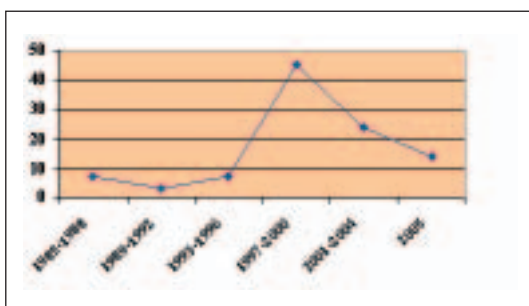
This massive result can be explained by three reasons in relation with the national context:

- Since 1997, the existence of a specific document for ICT within the general document which frames the contractual policy of state universities in France, a document which, by its very presence, takes on a prescriptive value;
- The fact that since 1998, in addition to budgets granted through contracts, specific budgets devoted to ICT have been provided in universities;
- The high level of participation of universities to programmes such as “Digital Campus” (80%, chart 7).

It was interesting to pinpoint the periods when these policies were set up (chart 8) and look to what extent the institutional context could play a part in this domain.

An open question enabled to collect the largest possible span of answers escaping the limitations and suggestions of multi-choice questions. It also allowed to note that out of the 74% institutions of the corpus that answered the question precisely (34% of the whole corpus), 17% did actually set up a policy for ICT integration in their courses before 1993. Almost 70% did so between 1997 and 2004. Contrary to the visual fall in the graph, the upward trend keeps up in 2005 since during this only year, 14% of respondents adopted a policy of “*e-learning*” development.

Chart 8: Time periods during which policies for “e-learning” implementation were designed in institutions



Time periods		%
2005	4	14
2001-2004	7	24
1997-2000	13	45
1993-1996	2	7
1989-1992	1	3
Before 1988	2	7
Total	29	100

When compared with the usual fate of national policies in this domain, the curve shows results neither abnormal nor random.

In 1988, for instance, the “quadrennial contracts” newly imposed on universities temporarily slowed down the production of innovative technological projects that, up to then, used to be mostly carried by persons on the fringe of academic authorities (Dumont, 1992¹³).

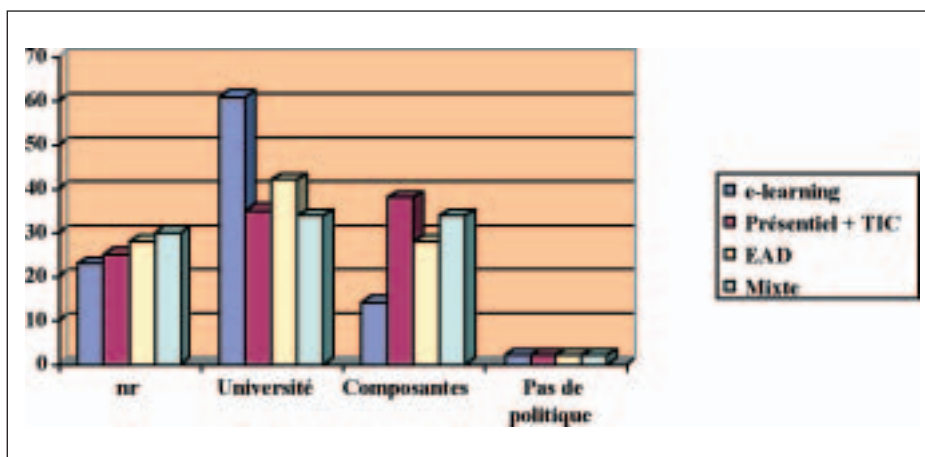
From 1997 on, the ministry of higher education engaged in an active policy of support to ICT with the creation of successive departments or head offices for scientific information and technologies. Chart 14 displays a sharp peak at that period which evidences the important role of inciting actions at the national level.

The results concerning the initiators of local e-learning policies are more spread out than expected (chart 9). Considering the number of higher education establishments who declare that they have set up a specific policy (77%) and those who have joined in a consortium (82%) one could expect that the local academic authorities would be the main initiators of e-learning development in their area. In fact, this is the case only in one out of three cases, another third coming from other “subcomponents” and another third being non answers.

This observation reveals a real risk of fragmentation of initiatives and subsidies running counter the consistent and cohesive type of policies intended at the origin.

¹³ Dumont B. (dir. par), 1992, *Study on the pedagogical use of new technologies at undergraduate levels*. ”LID – Université Paris 7. 1st edition: January 1992. 2^d edition: March 1993. Out of print. Excerpts available on ITEM-Sup site: www.item-sup.org

Chart 9: Authorities initiating a policy for “e-learning” according to its different modalities

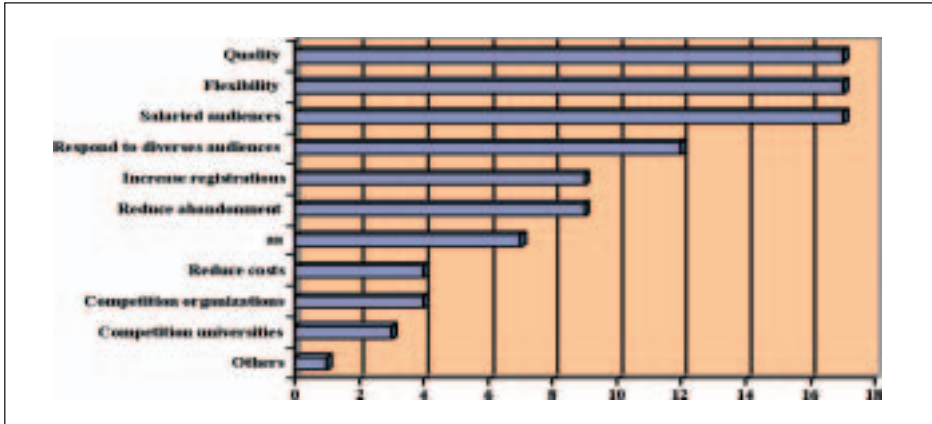


E-learning modalities	No answer		University level		Subcomponent level		No specific policy		Total	
		%		%		%		%		%
All modes taken together	10	25	27	61	6	14	1	2	44	100
Face to face with ICT	12	25	17	35	18	38	1	2	48	100
Distance	13	28	19	43	13	28	1	2	46	100
Blended (face to face + distance)	14	30	16	34	16	34	1	2	47	100

Aims related to teaching quality and coping with demand

In terms of aims ascribed to “e-learning” development (chart 10), the institutions massively give priority to the teaching quality and flexibility of courses supply, in relation to growing demands from audiences that tend to get more and more diversified and increasingly made up of distant or salaried people. Cutting down the rates of drop outs, notably in the early years of study, and increasing registration figures are two other objectives mentioned.

Chart 10: Policies objectives in “e-learning” implementation



		%
Quality	26	17
Flexibility	25	17
Salaried audience	25	17
Diversified audiences	18	12
Increase registrations	14	9
Reduce abandonment	14	9
aa	10	7
Reduce costs	6	4
Competition with various organizations	6	4
Competition with other universities	5	3
Others: share and rationalize pedagogic means	1	1
Total	150	100

Questions related to costs reduction and competitions do not appear as critical issues yet. However, many reports evidence that the use of technologies in education can achieve a cut in costs only if human

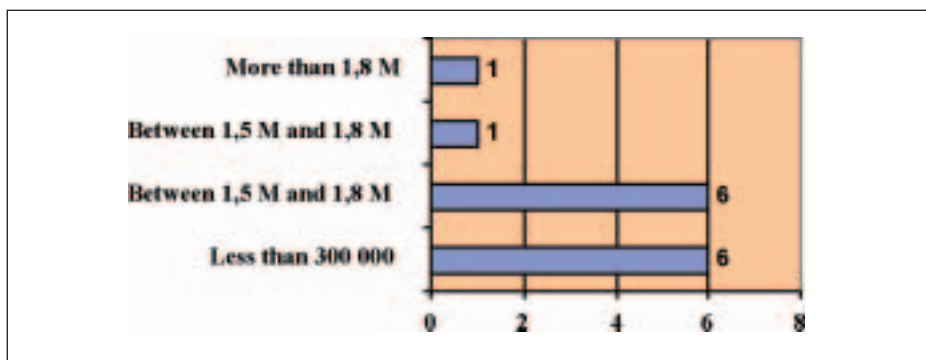
accompaniment is sacrificed. In that case, one is entitled to wonder how the major aims of quality enhancement, adaptation to a diversity of students and drop out reduction can be reached. The aim of facing competition gets very low scores: this may be because in France, for the time being, institutions rather behave according to a logic of mutual exchange where each team develops its own specific competencies in a complementary way with the resources available in its sector, whether at local, regional or national level.

Policies and funding

With a very high rate of absent answers (average 65%) on the whole sets of questions, the results only have a relative significance. This is why we only retain figures that give an indication of annual expenditure and an opportunity to draw comparisons.

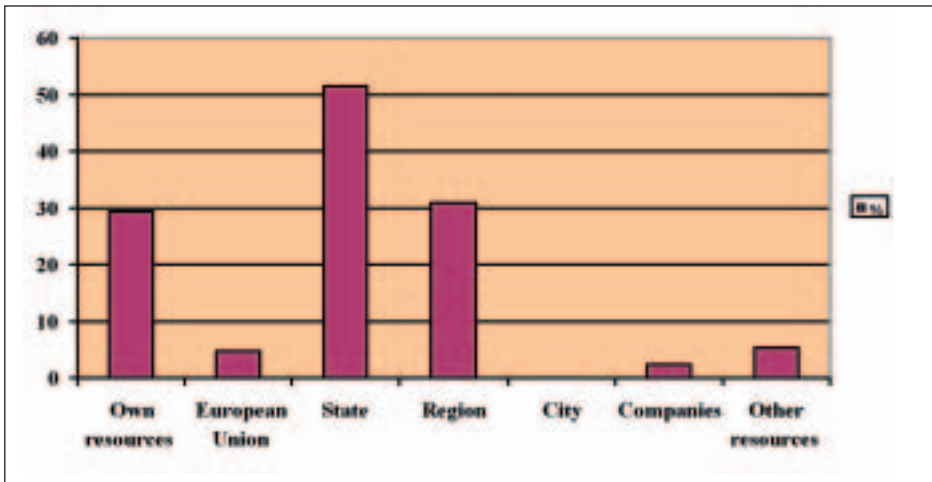
Budgets announced as being dedicated to “*e-learning*” are variable (chart 11): a single institution declares more than 1M 800000 euros; another between 1M 500000 euros and 1M 800 mille euros; six institutions spend less than 300000 euros a year.

Chart 11: Budgets dedicated to “e-learning”



Concerning the origin of funds devoted to ICT in teaching, average figures (chart 12) allow to know which political authorities do back “*e-learning*” in universities (mainly State, then Region), which don’t (City) and which less (Companies, European Union).

Chart 12: Average annual financial resources in relation to the budget of the institutions (%)



Yet, as is often the case with averages, the results give neither account of the number of grants by each authority nor of the disparities between those grants and institutional funds.

Indications of uncertain implementations

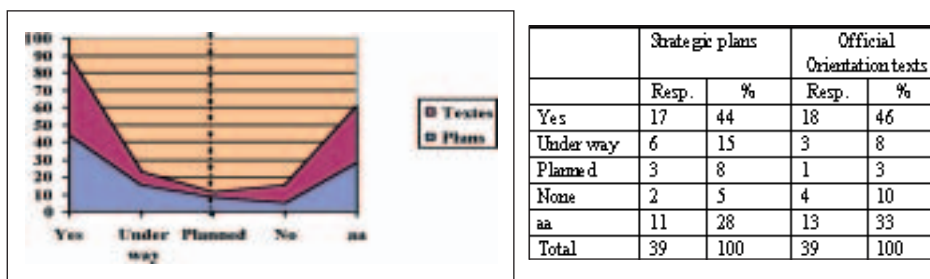
The answers to questions probing the actual components and concrete realizations of institutional e-learning policies¹⁴ disclose a more contrasted picture, possibly because, as the chart 8 above shows, e-learning is a relatively recent phenomenon in higher education.

Strategic plans of development and official orientation texts

About only a half of the 30 institutions (i.e. 77% of the corpus) that promote voluntarism in this issue give a positive answer to the question of an existing strategic plan of development and of official orientation texts (chart 13).

¹⁴ According to criteria such as: presence of official texts of orientation, strategic plans of development, persons explicitly in charge of the initiatives, training schemes for staff and students.

Chart 13: Presence of strategic plans and orientation documents



On chart 13, one can read that the answer “Planned” (vertical axis) is situated in a median position, with positive answers on the right and negative answers on the left side. This tends to show that in about half the situations there is a *temporal gap*, while in the other half *there is no visible link between the working out of a policy by the institution and its actual implementation*. This remark deserves further examination for if it is correct, two hypotheses can be put forward as an explanation:

- In spite of publicized intentions, ICT integration in courses is not a priority in the institutions’ policy.
- Whenever this integration is part of the policy of the presidential team, administrative impediments (authorities’ validation) are such that the path from intentions to implementation is obstructed.

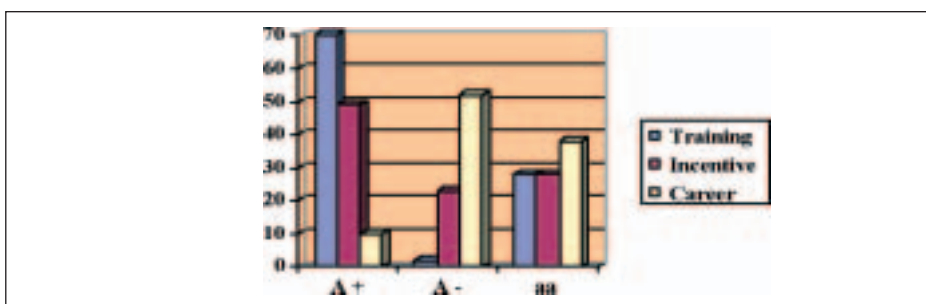
We would like to put forward the idea that the managing presidential teams composed of eminent scholars in their disciplinary domains should be more strongly supported in the preparation and implementation of the institution policy as this is an activity they are not much trained to practise.

Training plans and incentives

As far as *teaching staff members are concerned*, statements are strongly positive¹⁵ (chart 14) for training plans (70%), a bit less for financial incentives (49%). Impact on career is much weaker (10%). This observation reflects a situation periodically discussed in France and well beyond ICT issues: in spite of the triple duty admitted for teachers-researchers (teaching, management and research), their career *does exclusively* – with very few exceptions – depend on their research activity.

¹⁵ Since the majority of schemes are relatively recent (chart 8), in this section it was decided to gather into a single class termed “positive answers” (A +), all the answers “Yes”, “Underway” and “Planned”. To our mind this only indicates a trend not a reality, given the fact that the answer “Planned” is likely to recover glamour answers or an improbable realization of the respondent’ intents.

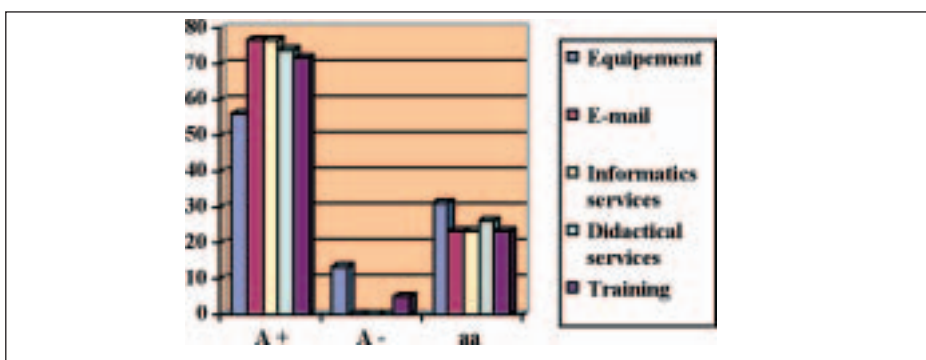
Chart 14: Existence of training plans, financial incentives or advancement of teachers' careers



	R +		R -		aa		Total	
	Resp	%	Resp	%	Resp	%	Resp	%
Training	27	70	1	2	11	28	39	100
Incentive	19	49	9	23	11	28	39	100
Career	4	10	20	52	15	38	39	100

Statements about grants and support plans for teachers (chart 15) through IT equipment, electronic mail addresses, access to didactical and technical support and to specific training sessions are also highly positive (average rate 71%).

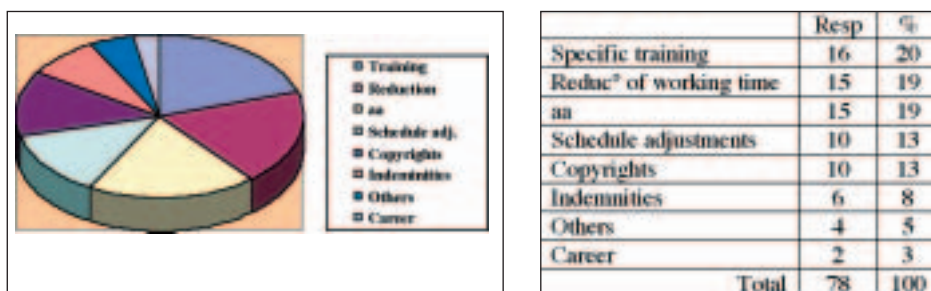
Chart 15: Existence of IT support plans for teachers



	A +		A -		aa		Total	
	Resp	%	Resp	%	Resp	%	Resp	%
IT equipment	22	56	5	13	12	31	39	100
Electronic mail	30	77	0	-	9	23	39	100
Technical services	30	77	0	-	9	23	39	100
Didactical services	29	74	0	-	10	26	39	100
Training	28	72	2	5	9	23	39	100

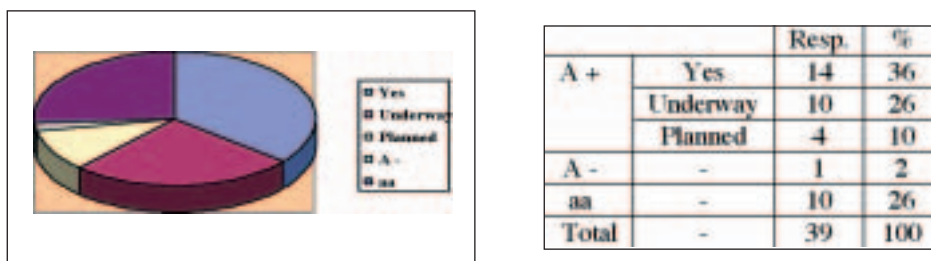
Prevision in terms of financial incentives (chart 16) mainly consists in the supply of specific training sessions (20%) and the possibilities of schedule adjustments (reduction of working time or remunerated overtime) or spatial arrangements (video conferencing work). Other possibilities are experimented with payments of copyrights (10%) or indemnities (6%).

Chart 16: Prevision regarding incentives to use ICT in courses



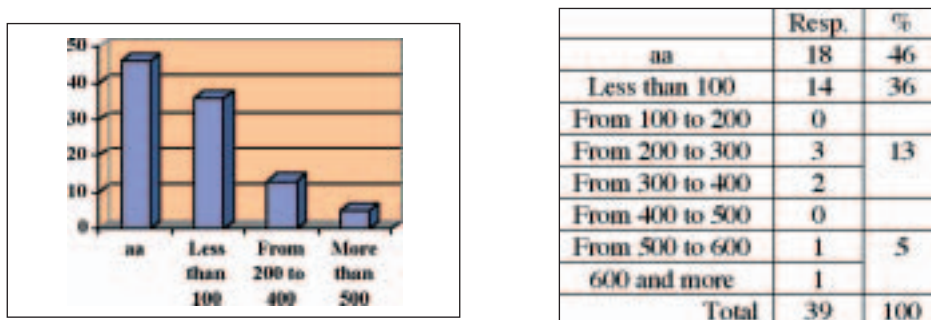
When one tries to know if a training plan was actually set up in the institution and how many teachers were effectively concerned, the answers in chart 17 compare with those in chart 16.

Chart 17: Existence of specific training courses for teachers



However, the number of teachers concerned is highly variable (chart 18). Most establishments state they have trained less than a hundred persons and there is a high rate of absent answers (46%).

Chart 18: Number of teachers concerned by training sessions



The sum total amount to nearly 3500 teachers trained in the 21 establishments implementing an integration policy of IT technologies in teaching and courses. Comparing charts 18 and 22 enables to confirm observations previously made by the authors of the report through several other researches: the aims of training sessions are usually more instrumental, i.e. designed to help teachers get a mastery of technical tools, than pedagogical, i.e. to help teachers integrate the tools into their pedagogical practices.

Other category of staff members can also access approximately similar training schemes.

Results are close¹⁶ to those obtained with the teaching staff (chart 17), slightly inferior for positive answers (between 2 and 5 points) and slightly superior for negative answers (between 4 and 6 points). Less than 100 persons are concerned in 15 institutions, between 100 and 200 within 2 others, more than 600 in another one (21 aa). Finally, in the 24 establishments liable to propose a training programme, more than 2000 persons have been trained.

Students seem to be treated in a similar way¹⁷ (a difference of 1 to 3 points with teachers) yet with numbers ten times as high. Less than 100 students were concerned within 15 institutions, between 3000 and 4000 in another one and between 5000 and 6000 in another (20 aa or 51%). The grand total gives an average of more than 17 000 students trained in institutions in parallel to traditional courses in their disciplinary domain.

Within this context, *teachers and students* can take advantage of other measures of encouragement and support¹⁸: grants for computer equipment¹⁹; electronic mail addresses²⁰; services of a technical department²¹ or support by a didactical department²². For students, the access to specific services (IT, documentation and pedagogy) means additional costs in only 13% of cases²³.

¹⁶ 31% of institutions answer in a positive way (12/39); 22% have a Project underway (9/39); and 8% are planning to develop one (3/39). 8% of the answers are negative (3/39) and the rate of aa is 31% (12/39).

¹⁷ 33% of institutions (13/39), 28% of answers related to projects which are being worked out (11/39) and 8% of institutions plan to develop one (3/39). A negatives answer and 11 aa, or 28%.

¹⁸ Average, 28% aa.

¹⁹ Teachers: 56% (22/39). Students: 69% (27/39).

²⁰ Teachers and Students: 77% (30/39).

²¹ Teachers: 77% (30/39). Students: 54% (21/39).

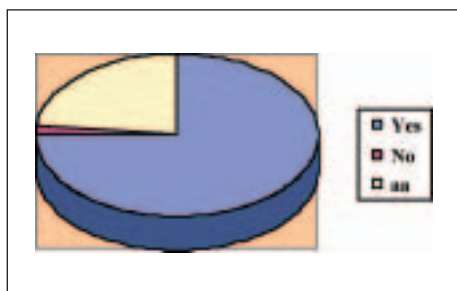
²² Teachers: 74% (29/39). Students: 56% (22/39).

²³ Additional cost: Yes: 13% (5/39). No: 41% (16/39). aa: 46% (18/39).

Structures responsible for “e-learning” in local institutions

Among the 39 respondents, 75% state they have set up inner structures responsible for IT integration in learning activities (chart 19).

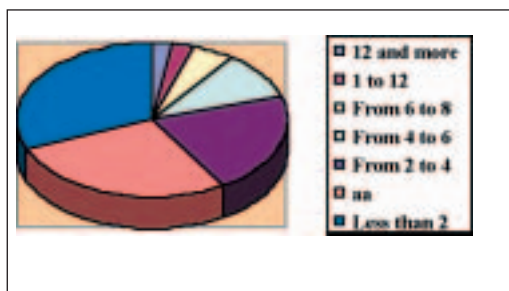
Chart 19: Existence of structures responsible for “e-learning” development



	Resp.	%
Yes	29	75
No	1	2
na	9	23
Total	39	100

Is this responsibility centralized on limited structures or distributed over a larger number of diversified structures?

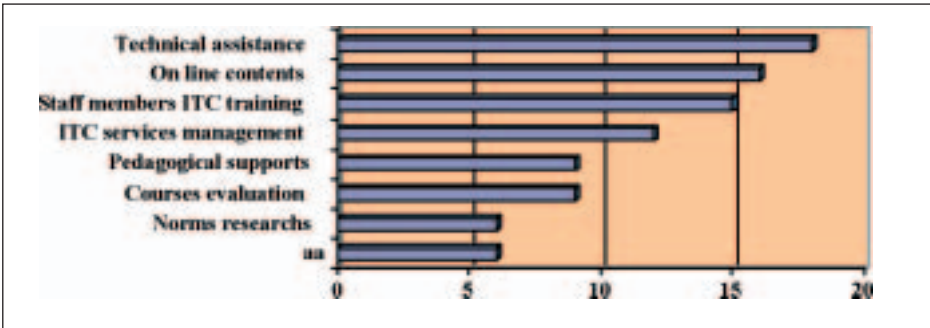
Chart 20: Number of ICT structures in institutions



	Resp.	%
Less than 2	20	52
na	0	0
From 2 to 4	11	28
From 4 to 6	4	10
From 6 to 8	2	5
From 10 to 12	1	2,5
12 and more	1	2,5
Total	39	100

Chart 20 show that the number of structures in charge remains limited in a majority of cases (52% establishments have less than 4 structures) and chart 21 that they are responsible for specific tasks (The most frequently mentioned tasks are mainly technical: assistance, on line information and delivery of learning contents). Staff training to ICT use can also call on these services as well as various other activities related to ICT. More rarely, these structures are responsible for producing learning supports and promoting innovative actions or research dynamics.

Chart 21: ICT structures duties in institutions



	Resp.	%
Technical assistance	28	18
On line contents	26	16
Staff members ICT training	24	15
ICT services management	19	12
Pedagogical supports	15	9
Pedagogical inno. researches	14	9
Courses evaluation	14	9
Norms researches	9	6
aa	9	6
Total	158	100

As denoted by their names²⁴, the trend to multiplying structures dedicated to ICT seems to go along with the development of *e-learning*. This is confirmed by the field observations of the authors of this report. If the institutional authorities do not set up a strong piloting unit, this tendency might threaten their policy in the long run.

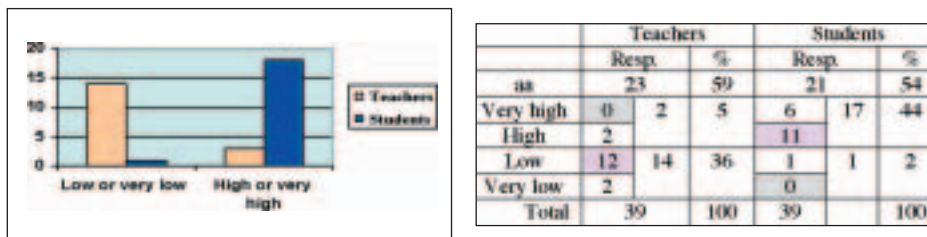
From political strategists to grass root actors: the degree of acceptance

This part of the survey was meant to appreciate the coherence between proclaimed intentions in terms of institutional policy and concrete achievement in terms of implementation. Another question was about the consistency between institution policy and reactions and expectations of the actors concerned. The assessment of the degree of acceptance of educational technologies by teachers and students, elicit answers that spread that out from factual data derived from local satisfaction surveys to personal

²⁴ Mediatization cell; Centre for ICT education resources and support; Centre for pedagogical engineering; multimedia centre; ICT education commission; New education technologies management unit; information and communication department; etc.

estimates. The results in chart 22, with nearly 60% of absent answers, evidence a striking inversion of acceptance from teachers to students.

Chart 22: “e-learning” degree of acceptance by teachers and students



These results, along with the high rate of absent answers raise the question of what kind of understanding of field realities institutional policy makers rely on when they deal with this issue. The questioning is reinforced by the results about research prospects in the same domain (see below paragraph # 5). At any rate, at least in France, *the probability for a majority of teachers to get convinced of using ICT in their pedagogical practice seems far from established.*

Pedagogical practice: a surface modernization entailing no deep change

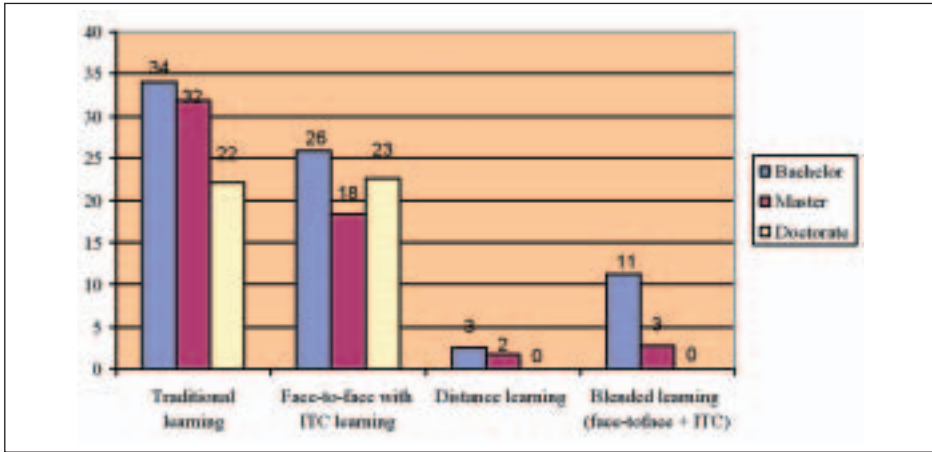
In France, technologies do not seem to alter the organization of higher education institutions that remain mainly oriented to reproducing the modalities of a traditional three-part segmentation of face-to-face teaching: magisterial lectures, class lectures, and directed work sessions. A previous survey (Albero, Dumont, 2002²⁵) showed that digital technologies used in face-to-face learning contexts did modify neither contents nor interaction modalities but only the qualitative aspects of presentation of contents such as reading quality, structure, graphics, variety and sophistication of illustrations (simulations, video excerpts etc.). This may be one reason why technologies are more easily used in contexts in which they do not disrupt the established teaching culture, their role being restricted to the technical enhancement of practices that pass off as unquestionable.

The predominance of traditional models

The average figures of courses available on each course level and for each modality (chart 23) show that a large majority is supplied in the “traditional learning” mode and a little less in “face-to-face with ICT”.

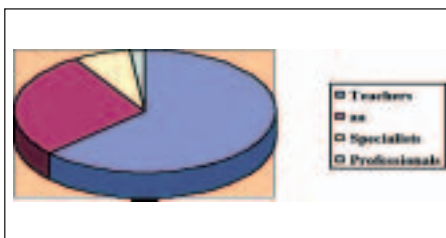
²⁵ *op. cit.*

Chart 23: Average number of course of study by learning types



As chart 23 evidences, when compared with traditional learning the proportion for blended learning (face-to-face and distance) plummets of two thirds (nearly 65%) for bachelor courses and of nine tenth (nearly 90%) for master courses and even lower for “Distance learning”. No courses at all involving blended or distance learning are offered at the doctorate level. Staff members who work in “e-learning”(chart 24) are mainly “traditional teachers who adapt” (63%) with a rate of specialists and professionals extremely low.

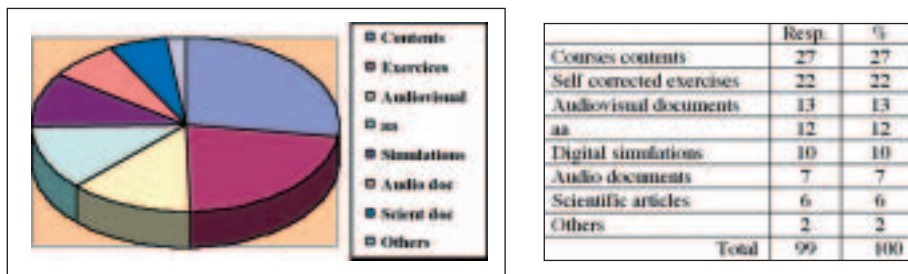
Chart 24: Pedagogical interveners



	Resp.	%
Traditional teachers who adapt	27	63
e-learning specialists	12	28
Professionals in charge of courses	3	7
Specialists	1	2
Total	43	100

When one seeks to know which documents are considered as preferably put on line, courses contents and exercises (49%) come first (chart 25).

Chart 25: Documents considered as having priority to be put on line



Yet, the very fact of putting documents on line and reshaping them into distant access multimedia databases opens up new opportunities for uses of a much wider range of supports. These different uses do exist as appears in chart 25, although at low levels: audio (7%) and audiovisual (13%) documents, digital simulations (10%), scientific articles (6%), and others such as web links, bibliographical references, photos and case studies (2%). The integration of technologies does not only meet a concern for *modernization of what already exists*. It also answers purposes of upgrading and adapting the supply of study courses to new audiences.

A predominant concern: the enhancement of study courses

The predominant concern for technical enhancement with no great change in working modalities gets a confirmation in the ranking of aims ascribed to “*e-learning*” as shown earlier in chart 10. The first place by far is given to the *general pedagogical* aspects (quality²⁶ and flexibility²⁷) as they are likely to lead to an *optimization of courses supply* (by addressing working students²⁸ or other categories²⁹, cutting down dropout rates and raising the number of registered students³⁰). To the contrary, the objective “mutual share and rationalization of pedagogical means” which is likely to lead to deeper structural changes falls to the eighth position with only one mention in the section “Others”. In fact, according to the respondents’ statements, except for the addition of digital support, a teacher’s activities scarcely differ from his usual ones (chart 26).

²⁶ Rank # 1, “a better quality in the training process” is an item chosen 26 times.
²⁷ Rank # 2, “more flexibility in the training process” is an item chosen 25 times.
²⁸ Rank # 2, la “possibility to propose course to salaried” is an item chosen 25 times.
²⁹ Rank # 3, la “possibility to propose course to other categories of students (impeded, etc.)” is an item chosen 18 times.
³⁰ Rank # 4, la “Reduce rate of abandon” is an item chosen 14 times with aim “increase the number of registered students.”

Chart 26: Teacher's activities and "e-learning"



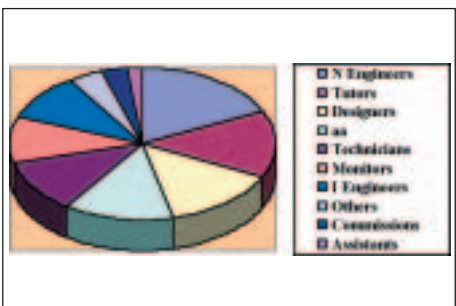
The teacher ...	Resp.	%
... organizes contents	24	19
... manages pedagogical relations	24	19
... proceeds to evaluation	24	19
... brings help for some tasks	18	14
... proceeds to validation	15	11
no	14	10
... is relieved for some tasks	9	7
Others	2	1
Total	130	100

Incidental changes in relation with the ICT culture

An actual change entailed by IT in the usual activity of teachers is the help they can get in some cases (14% of answers) and the relief or relay for some activities (7%). Answers to open questions enable to know a little more. *Helps* or relays are first and foremost *technical* (assistance and repair, use of intranet, putting data on line, multimedia creations) then only *secondarily pedagogical* (coordination, advice and follow-up for didactic script writing, student monitors and student tutors).

In addition to teachers, other contributors can play a part in course setting and managing on digital supports (chart 27). Beside regular roles (*tutor, monitor, assistant*) and predictable specialists in the domain (computer engineers, network engineers, designers), "Validation commissions" are now being created to ratify pedagogical contents. Even if this function is rarely mentioned (3%), it nonetheless indicates that the spreading of digital supports for study courses might lead social and academic environments to set up controls on teaching activities, a new feature in the university world.

Chart 27: Other "e-learning" contributors



	Resp.	%
Informatics engineers	19	18
Tutors	15	14
Multimedia designers	15	14
no	14	13
Technicians	12	11
Monitors	11	10
Network engineers	10	10
Others	4	4
Validation Commissions	3	3
Research assistants	2	2
Total	105	100

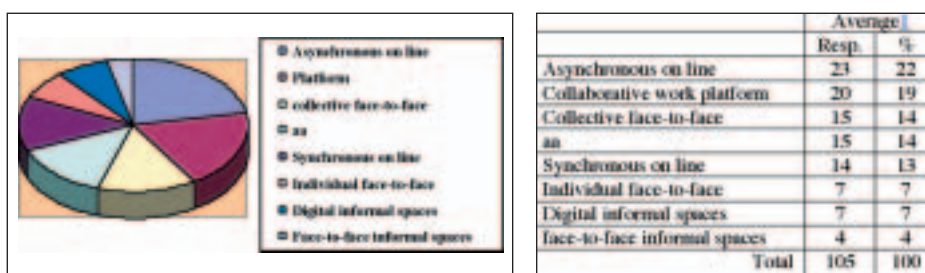
New professions such as "coordinator" in distance learning or "pedagogical engineer", although marginal, are stated to appear in the educational sector,

particularly in higher education (answers to the open “Others” question). The problem then is: which kind of legal status and recognition will these new professions get, knowing that the bulk of “*e-learning*” development largely depends on them.

A wider scope of pedagogical communication

With ICT, means of distance communication have considerably diversified (chart 28).

Chart 28: Means of distance communication for a wider scope of pedagogical relationship



Owing to ICT potentials, students can dialogue with³¹ an “*e-learning*” referent teacher (21%) but also with³² every teacher in charge of their training (51%). They can also contact various interlocutors: tutors (31%), technicians (14%), archivists (12%), monitors (8%) or some one else (8% “others”): ICT assistants, training supervisors, distance learning coordinators, study managers, ICT engineers and various referents in charge of distant sites.

Peer students represent another training resource. Every student has the opportunity to contact³³ other students in his group (47%) or other groups (24%) or senior students in the same course (2%). Chart 28 highlights the proportion of communication on digital supports (61%) in comparison with face-to-face (25%). Yet, the issue needs further study as to the actual transition from ICT potentials to their concrete achievement. Little is known about the nature of exchanges within the different situations nor about the part they play in the effectiveness of training. Besides, knowing that distance learning and blended formulas taken together only represent 2% of the total

³¹ Item 160, aa: 28%.

³² Item 163, aa: 27%.

³³ Item 166, aa: 27%.

learning typology (fig. 6), it is relevant to wonder how pedagogical communication is organized for the other 98 %.

Mutual profit sharing and optimization: two underused key processes?

ICT give opportunities to manage a good many distance situations. Optimizing the administrative systems can lead to a greater flexibility and to an opening to students and teachers far from their establishments (chart 29).

Chart 29: Different kinds of managing tasks by teachers

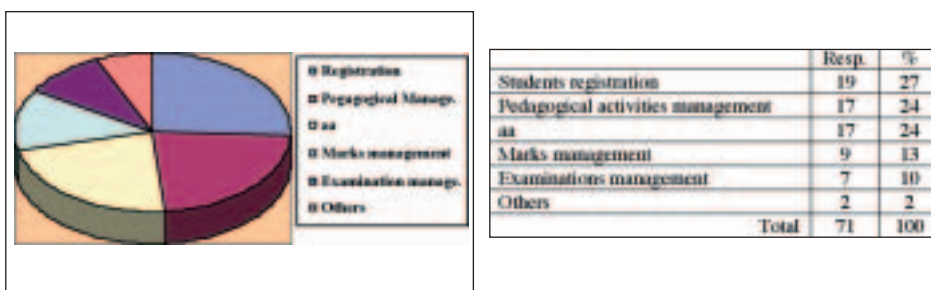
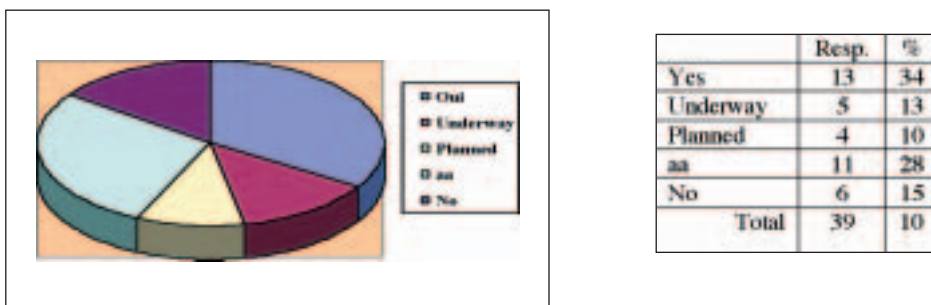


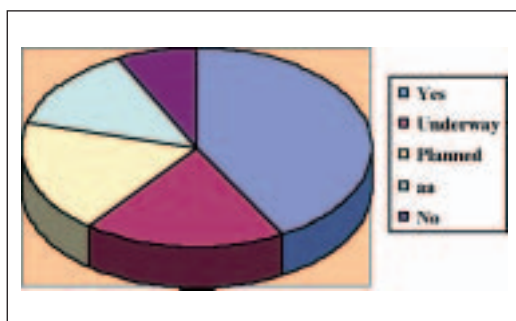
Chart 30: Existence of on line administrative management



The rate of positive answers (57%) in chart 30 indicates that many universities seem to engage in some kind of on line management.

Besides, the simple fact of being able to file in stocks of original information and to plan their consultation by students outside the institution induces teachers to integrate the “distance” factor in courses design and to structure digital spaces accordingly (chart 31).

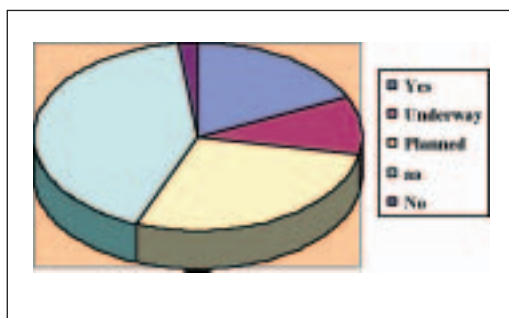
Chart 31: Elaboration of on line databases



	Resp.	%
Yes	13	34
Underway	6	15
Planned	6	15
aa	11	28
No	3	8
Total	39	100

Chart 31 shows the institutions' high investment in databases elaboration (64% of positive answers). This result raises the question whether this effort will lead to share the investment with a view to inter-operating technical means (chart 32).

Chart 32: Data base possible inter-operating



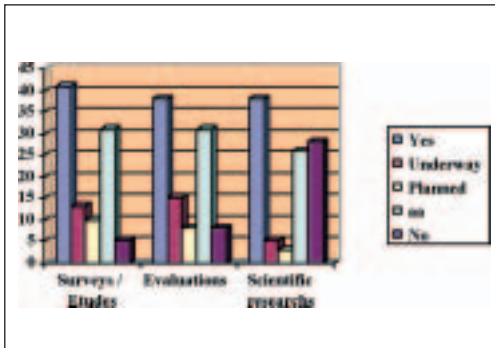
	Resp.	%
Yes	7	18
Underway	4	10
Planned	11	28
aa	16	42
No	1	2
Total	39	100

Chart 32 emphasizes a high rate of positive answers (56%) as compared with negative (2%). Unfortunately, the questionnaire does not allow tracing the reason or meaning of the abnormally high rate of absent answers (42%).

ICT effective practices and research on usage

The integration of digital technologies within learning practices and workspaces (in relation with administrative, pedagogical and communication tasks) is no trivial matter. It is likely to strongly modify the environment (space and time) and the modalities (rhythm, contents, languages and tools) of situations in education. It is interesting to know whether institutions gave themselves means of investigation to understand the phenomenon and/or methods to improve existing schemes (chart 33).

Chart 33: Kinds of studies on ICT uses conducted in institutions



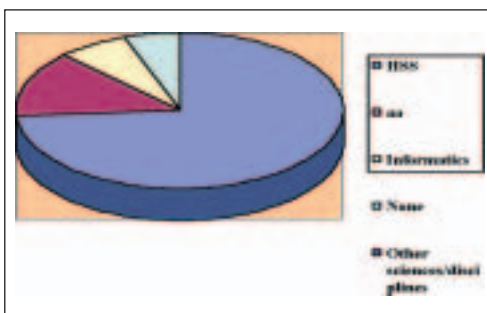
	Surveys and studies		Evaluations		Scientific researches	
	Resp.	%	Res.	%	Res.	%
Yes	16	41	15	38	15	38
Underway	5	13	6	15	2	5
Planned	4	10	3	8	1	3
No	12	31	12	31	10	26
None	2	5	3	8	11	28
Total	39	100	39	100	39	100

Chart 33 shows that in spite of a rate of absent answers difficult to interpret, the rate of positive answers is above or around average for three types of investigations: *surveys and studies* (64%); *evaluations* (61%); *scientific research* (46%). Thus, according to the respondents' statements, observation and analysis of the uses of technologies developed in establishments seem to keep up with their development.

The high rates of No and absent answers (54%) in the scientific sector may be explained by the endemic rift existing in France between research in hard sciences and research in human and social sciences. The recurrent assimilation of scientific research with experimental methodologies leads to deny any scientific status to non-experimental ones. This stands as a real impediment to the academic recognition of research work on ICT usages, which is, by definition, context-dependant and interdisciplinary.

It seemed useful to investigate whether the integration of technologies likely to modify pedagogical interactions and relations was an interesting subject for research in faculties belonging to various sciences or disciplines (chart 34).

Chart 34: Research in Education by disciplinary sectors



	Resp.	%
aa	12	18
Educational sciences	11	16
Information 'communica'	10	15
Psychology	7	10
Engineering training	6	9
Sociology	6	9
Informatics	6	9
None	5	7
Didactics	4	6
Others	1	1
Total	68	100

Chart 34 shows that, notwithstanding some marginal research in scientific fields such as Chemistry (1%), Maths for Biology, Physics, Medical sciences, Physical training or Computer sciences (9%), research on educational relationship is mainly assumed by the Human and social sciences (65%).

One will notice that, in spite of these positive statements, a whole set of issues that can be considered as determinant for the future, gather a high rate of absent (up to 31%) and negative answers (up to 56%). Among other issues potentially concerned by an “*e-learning*” impact, the following are still waiting to be investigated: flexibility in time and space of teacher and student work; students’ working time duration; individualization in courses of study; evolution of the teaching profession; teachers’ acceptance; students’ acceptance; students’ awareness of their own responsibilities in training; reduction of dropout rates; encountered impediments; risks; costs evolution. These apparently paradoxical results corroborate studies conducted by one author of this report. In a paper reviewing French research work on ICT education and training (backed by the Ministry of Research, 2002-2005), F. Thibault³⁴ showed that the gap between the different sectors of study rather tends to broaden at present. A significant increase of research work in Computer and Cognitive Sciences gathered under the heading EIAH (*Environnement Informatique pour l’Apprentissage Humain: Digital Environments for Human Training*) is observed. Whereas, conversely, in the Human and Social Sciences, research work addressing issues relative to organizational and pedagogical changes in the ICT context or the evolution of the economics of higher education remain fairly scarce.

Such weak investment of research in the human social dimensions of ICT use is to be paralleled with the trend of most center research and surveys to focus on the latest technical innovations.

Impediments to “e-learning” development

One third of the answers points out the “*teachers’ lack of support*”. Some obstacles pointed out in the item “others” give major reasons to explain this lack of commitment: “*lack of acknowledgement of pedagogical activities (related to IT) in the occupational duties of teacher-researcher*”, activities which although a basic part of the job “*are not taken into account in the statutory*

³⁴ THIBAULT F “La recherche sur les TICE, où sont passées les sciences sociales?”, to be published in 2006 in a book of chapters edited par P. Plantard, Presses de l’Université de Rennes (PUR).

teaching work time". These arguments are to be replaced in their context, at a time when the national policy for higher education (Ministry, university and scientific boards and commissions) is adopting selective measures reinforcing the emphasis on research activities at the expense of the other two statutory academic activities: teaching and administrative responsibilities. The "*modification of the learning process*" in relation with ICT can also provide an explanation if one considers that staff are scarcely trained at all in pedagogy, didactics or psychology of learning. The increasing complexity of processes related to ICT implementation tends even more to obscure the issue and consequently to complicate pedagogical action.

Another third of answers points to the "*lack of available competencies*" in state establishments regarding technical abilities (computer data processing, engineering and design). In this case, answers in the category "others" again provide further information: managing a quantity of "*administrative constraints*" and sorting out multiple "*juridical, financial and economic difficulties*" require competences that exceed by far the capacities of teacher-researchers who are primarily trained to be specialists in their scientific domain. University structures at large are not adapted yet to these new social and technical features.

A last third of answers is distributed between "*lack of adequate fittings*" and "*lack of relevant investments*". We were able to go deeper into the issue related to *juridical impediments*, which confront³⁵ more than 50% respondents.

More than two third answers point out difficulties related to "copyrights" as well as to the creation of pedagogical resources and pictures data banks using audio, written or audiovisual documents from various sources. The copyrights issue is also connected with the unsolved problem of the status of intellectual property in the domain of pedagogical production and of the payment of teachers for a kind of activity that cannot be accounted for, if one follows the criteria of traditional face-to-face teaching working hours.

Other difficulties come up, just as formidable, in connection with the management and drawing up of partnership contracts and conventions, the knowledge and mastery of legal regulations related to intellectual rights, the marketing and distribution of resources and co-productions to be shared out between a variety of types of institutions and staff categories.

³⁵ Juridical impediments: Yes, 51% (20/39). No, 26% (10/39). aa, 23% (9/39).

Risks related to e-learning development

One third of the answers consider there is no risk in the development of “e-learning”. To the contrary, another third highlights the fact that “*too much attention is given to technical aspects at the expense of pedagogical aspects*”. A last third is divided between various concerns in relation with the pace of “e-learning” development (“a slow rate of growth since it depends on personal commitment and financial incentives”). Among them:

- The *underestimated status of experience* (“our experience remain largely anecdotal”, “risks of working with ‘pioneering people, apart from teachers in charge of courses that would yet plainly benefit of being put on line”);
- The *uncertain permanent status of projects* (“follow up and further funding of implemented programmes);
- The *disengagement of state institutions* in educational matters (“risk of seeing the financial and pedagogical charge transferred to students”);
- The seemingly *opaque* understanding of the complexity of phenomenon at stake in “the changes in the teaching-learning process”, along with the doubtful capacity of institutions to respond to it.

Training schemes in establishments: a deficient information about a multiplicity of heterogeneous situations

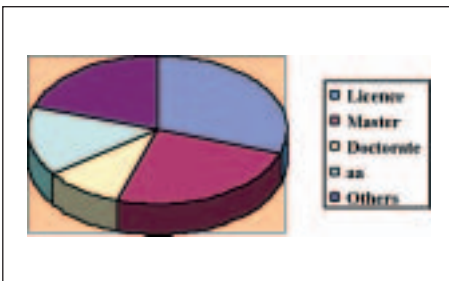
Part 2 of the form enabled to collect data on 59 training schemes that come under the heading “e-learning”. The information remains very incomplete as compared with the number of items dedicated to the subject and which the respondents ignored. Nonetheless, some of the answers to open questions (notably item # 166) enable to set forth several explanations. First, many of these programmes are too recent to be able to produce steady reliable information. Then the generic formatting of the questionnaire form does not always fit with particular situations. As we put it previously in the methodology chapter, we lack a pre-test that would have allowed to assess the actual understanding of terms used and to judge whether the questions were appropriate to the programmes under study. Lastly, some of the schemes developed from through individual or small group initiative may be kept to the fringe and escape the notice of institutional policy.

From the items that got a satisfactory rate of answer (more than 60%), it still is possible to draw interesting information. The existing schemes are mainly set up with the agreement of the institutional authorities (President, scientific committee, board of direction) (52% of answers with a 37% rate of aa).

According to 58% of the respondents, the course schemes are in a majority (48 %) conducted with other authorities, a statement in keeping with the analysis of the higher institutional and national levels engaged in the consortia. The partnerships are set up in collaboration with other institutions, in some cases with higher education public schools, rarely with private companies.

The training programmes address the three *levels of course study* (chart 35) as instituted through the Bologna process: Bachelor (30%), Master (25%) and Doctorate (10%). Some others courses are mentioned as referring to some kind of “e-learning” education (20%). They are directed to more unusual types of students (secondary school, 6th grade physicians, post-doctorate, salaried students, impeded, public at large) and they lead to diverse certifications: national certificates; local university inner diplomas (DU, DIU, DUT); previous experience validation (VAE). This kind of programmes actually extends the choice of normal education curricula since they offer continuing education courses to professionals, notably to teachers.

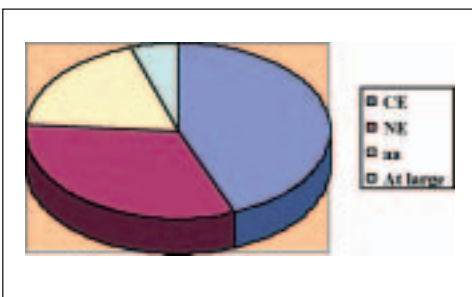
Chart 35: Distribution of programmes according to level of study



		%
Licence	24	30
Master	20	25
Doctorate	8	10
aa	12	15
Other levels	17	20
Total	81	100

Students enrolled in the programmes are (chart 36) split up into two main groups: continuing education (44 %) and normal training (32%). Although they represent a low proportion, it is interesting to notice that the public at large is mentioned (5%) and, in the category “others”, the opportunity of access to digital courses material for “life long education” people.

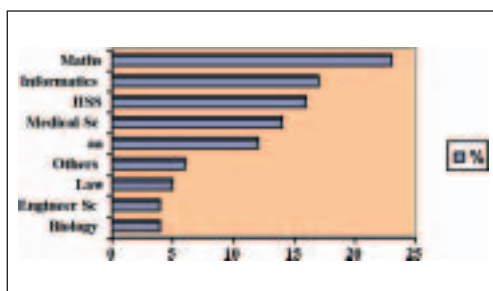
Chart 36: Types of audiences registered in corpus’ devices



			%
Continuing education	Miscellaneous	24	25
	Teachers / trainers	12	13
	Other civil-servants	5	6
Normal education	aa	30	32
	aa	18	19
Public at large		4	5
Total		82	100

As expected, the distribution of schemes according to scientific *disciplines* (chart 37) is predominant in mathematics and computer sciences. What is more surprising is the strong presence of Human and Social sciences next to medical sciences.

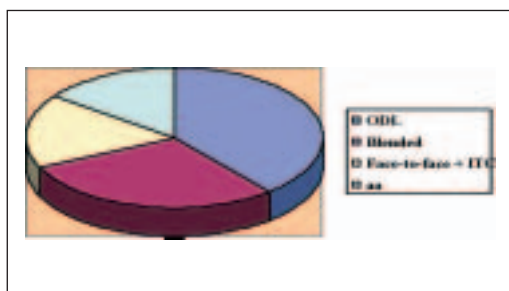
Chart 37: Distribution of corpus devices according to concerned sciences/disciplines



		%
Mathematics	18	23
Informatics	14	17
Human and social sciences	13	16
Medical sciences	11	14
aa	10	12
Others	5	6
Law	4	5
Engineer sciences	3	4
Biology	3	4
Total	81	100

The distribution of the *prevalent types of learning* is interestingly converse to the distribution predominating at the institutional level (chart 11). Emergent schemes in higher education distance learning (chart 38) are primarily devised to respond to the “distance” factor (68%). Contributors within the programmes rather describe their action in terms of “Open and Distance Learning”(ODL).

Chart 38: Distribution of programmes according to prevalent learning modalities

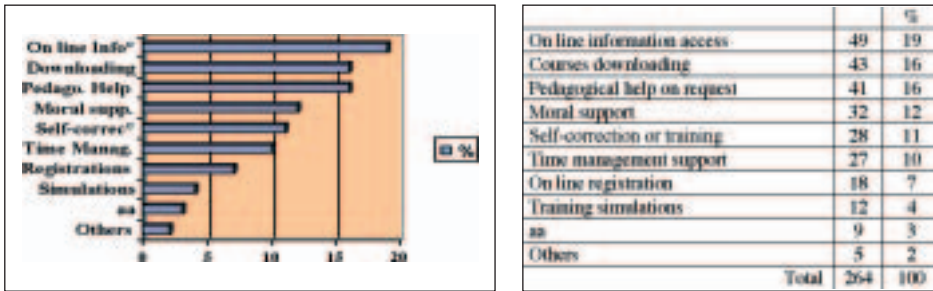


		%
Distance learning	26	39
Blended learning (Face-to-face + Distance)	19	29
Face-to-face + ICT	11	17
aa	10	15
Total	66	100

Pinpointing *learners' activities* (chart 39) was possible. It is interesting to note that, in parallel with the expected access to on line information (19%), help systems appear in good rank (38%), followed by courses download (16%) and self-training (15%) from self-corrected exercises or simulations. How such help is actually understood and used by learners is not known. The number and importance of skills a student must master before he can achieve

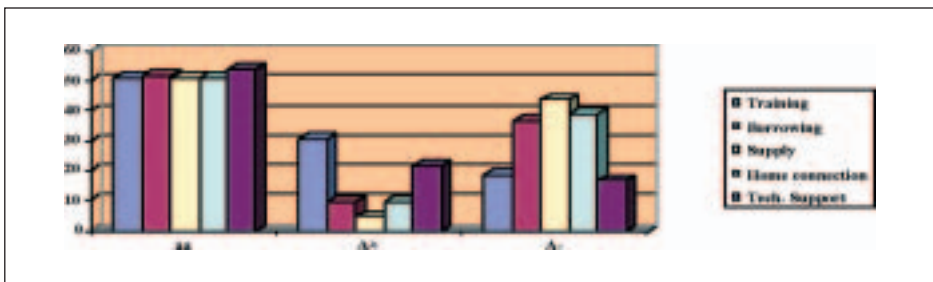
an autonomous training is such that the problem will have to be investigated in another more qualitative study.

Chart 39: Learners' activities in the survey "e-learning" programmes



Other working modalities (chart 39) are mentioned in the category "Others": guidance forums, shared documents and collaborative task spaces, pedagogical platforms but also professional training courses that reintroduce socializing face-to-face sessions. It is worth noting that students partly bear the costs of the technological conversion of learning systems (chart 40). If schemes plan training sessions to technology use (31% of the respondents) as well as distance technical assistance (22%), they offer little help for home equipment and connection (between 5 and 10% positive answers).

Chart 40: Services proposed by programmes to meet the costs relative to digital technologies

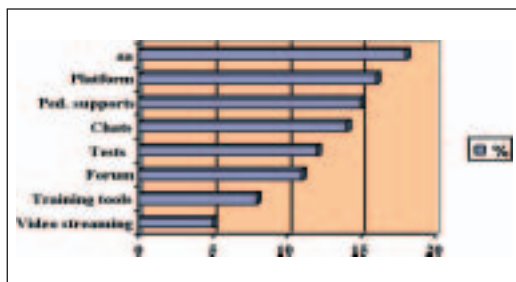


	as		A +				A -		Total			
		%	Yes		Underway		Planned		No			
				%		%		%		%		
Training	30	51	8	14	7	12	3	5	11	19	59	100
Borrowing	31	52	6	10	-	-	-	-	22	37	59	100
Equipment supply	30	51	3	5	-	-	-	-	26	44	59	100
Home connection	30	51	6	10	-	-	-	-	23	39	59	100
Technical support	32	54	14	17	-	-	3	5	10	17	59	100

If one adds to this observation the issue of registration fees, the problem of the continuous increase of training costs becomes a tricky one. This means that the economic aspect of e-learning still has to be seriously investigated and will provide a mine of questions for future research. Indeed, within institutions, very few studies and assessments are conducted on the subject at present (nearly 75% negative or absent answers) and absent answer to questions relative to programme budgets rise up to 95%.

The technical supports supplied (chart 41) are mainly platforms (18%) and tools for on line pedagogical material and assessment (27%). Communication implements (chat, forum) (25%) come second just before what is gathered in the category “training tools” (8%).

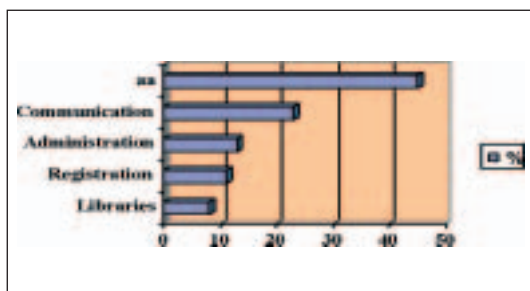
Chart 41: Technical tools used in “e-learning” programmes



		%
na	28	18
Platform	24	16
Pedagogical supports	23	15
Chat	22	14
Tests & evaluation supports	19	12
Forum	17	11
Training tools	13	8
Video streaming	8	5
Total	154	100

The different use of technical implements as shown in chart 41 evidences that the digital reproduction of workspaces and tools related to traditional pedagogical situation (white board, virtual laboratories) stand clearly marginal (1%) along with radio technologies and “older technologies” (CD Rom, Video cassettes). It was interesting to know how other complementary service supplies in “e-learning” courses were positioned (chart 42).

Chart 42: Other service supplies



		%
na	36	45
Communication	18	23
Administrative services	10	13
Registration	9	11
On line libraries	6	8
Total	79	100

Chart 42 highlights two related organizational phenomenons. First, the high rate of absent answers, close to 50%, induces to presume that the

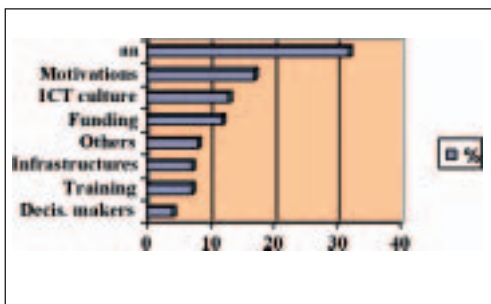
supplies of study courses and of other related services could be easily dissociated. In the other hand the weak availability of on line registration and of accessible digital libraries confirm the difficulty for institutions to achieve a coherent policy when they face” the “*e-learning*” phenomenon.

We get the same picture when trying to know whether courses and technical platform contents are home developed and whether results of this investment are shared with other institutions, departments or programmes. Accounting for a rate of 48%, absent answer, we know that *courses contents* are home developed in 37% of cases, a remaining 15% being completed with outer products (shared or purchased). *The fate of course contents* is various. With a 45% rate of absent answers, a majority of respondents (26%) state that their pedagogical production is not made available to other organizations, 14% offer them free of charge on web sites. Some respondents seem open to trading them for some other productions (10%) or for services (3%), less than 3% are available for sale.

Accounting for an absent rate of 66%, *platforms* are either open source (16%) or market purchased (11%) or home developed (7%). *The main criticisms* concerning platforms (65% rate of aa) are their technical difficulties and, especially for teachers, their high prices (15%) as well as their lack of flexibility (6%).

Difficulties with programmes (chart 43) come on top of those with institutions and add further difficulties: the “lack of commitment” of teachers is the counterpart of the absence of a really motivating system (17%) (See above); the lack of an ICT culture (13%) regardless of the actors concerned (decision makers, teachers, students) combines with the difficulties of fund chasing (12%) and severely hampers opportunities of development. Answers found in “Others” category reinforce the point: difficulties to “publicize programmes”, “students’ low appetite for distance learning”, “bureaucratic heaviness”, “contributors’ lack of availability”, recent constraints brought about by the European BAMAD model in terms of “revision of the whole structure of study courses”: all these drawbacks increase the difficulties related to the inadequacy of infrastructures (7%), difficulties likewise to be observed in the other sectors of institutions.

Chart 43: Difficulties encountered when starting a scheme or programme

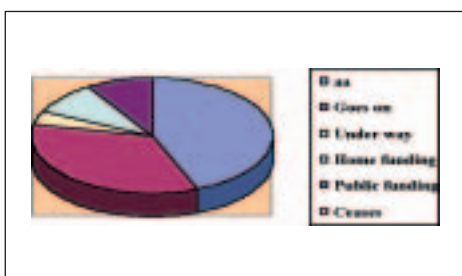


	Resp.	%
aa	31	32
Lack of motivating action	16	17
Lack of ICT culture	12	13
Fund chasing	11	12
Others	8	8
Inadequate infrastructures	7	7
Want of teachers training	7	7
Decision makers implica ^o	4	4
Total	96	100

Both pedagogical and administrative domains are plagued with the awkward issue of *online rating or assessment*. Out of the total 59 respondents, a mere 5% state they make use of on line exam sessions, with an extra 10% who consider adopting this modality. Among the 42% negative answers, reasons expressed for not abiding are either contextual or related to the nature of the rating. The first reasons are various and singular (inadequacy with the discipline, mode of administration of the exam, academic status of the staff responsible for the scheme, etc.). The second are more homogeneous, referring to three interrelated difficulties: students' identification, the examination's reliability and its quality as compared with face-to-face proceedings.

Chart 44 shows that, in spite of the many hazards attached to the novelty of e-learning programmes, a majority of respondents (38%) remain optimistic though with some uncertainties for 18%. No negative answer is given as regards future development.

Chart 44: Predictions relative to the future



	Resp.	%
aa	29	44
FUTURE +		
Goes on	23	34
Underway	3	4
Doubts		
Depends on home funding	6	9
Depends on public funding	6	9
FUTURE -		
Ceases	0	0
Total	67	100

Conclusion

A tribute must be paid to the CRUI for responding to the European Union call for bid and allowing this survey to take place thus opening up many prospects.

The accelerating pace of technological innovation and of policy plans to develop ICT in education is sometimes liable to confuse the image of learning institutions. The present study is a means to investigate the concrete bustling complexity they have to face.

If the survey does demonstrate that many positive signs due to official political impetus are indeed perceptible in the life and organization of universities, it also shows that ICT integration is far from being achieved in French higher education. At all levels, the most observable effort was mainly directed to the technical domain (equipment purchase, network development, training and even research). Contrariwise, investment on staff proves much weaker with the consequence that teachers' use of ICT does not seem established yet. Pedagogical modernization is mostly superficial, essentially focused on online access to resources. Innovative programmes do exist, although limited, and they create new learning schemes on the basis of renewed pedagogical communication and interaction. They also contribute to creating new professions (tutors, various persons in charge of various aspects of the e-learning system) within universities.

The propensity to overestimate the pedagogical uses and contributions of e-learning facilities does not mean that universities implication in ICT issues is low. It does exist although an effective concern for the coordination of actions and their follow up through time is still lacking. A commonly shared opinion goes that ICT practice necessarily enhances teaching quality and flexibility even if its realization is not perceptible yet.

Two observations deserve to be mentioned as they run counter formerly prevailing ideas: ICT development did not lead to a really novel development of distance learning; ICT did not boost the competition between French universities, as they rather follow the logic of exchange and trade off.

The interest of the results obtained through this study and the partial fulfilment of its objectives justify the creation of a European observatory of e-learning in university education and training. To our opinion, this international observatory should be based on a networking of national units. Such approach would give every country an opportunity to make full use of the flexible communication made available by digital networks and to

incorporate a space of scientific interchange in which collected data, inquiry methodologies and possible recommendations could be discussed by the community.

Italy*

Introduction

The identification of referents and the range of the survey

Identifying who were to be the recipients of the questionnaire inside Italian universities was not always easy. In Italy, not all universities had appointed a referent of their university on e-learning by the time of the survey. The first result of the activities of the ELUE project, therefore, was once again to invite the universities to establish a figure of this kind.

The number of Italian universities that compiled the questionnaire, in part or in full, was fifty nine out of seventy seven (with a level of investigation of the universe of reference equal to about 75% of the total). To this, in reality, should be added the small number of universities which, although they did not fill in the questionnaire, justified their choice by indicating the low relevance of e-learning or experiences involving teaching supported by ICT within their structures (were these universities to be added to the total the replies would rise to 83% of the universe under investigation). However, some universities remained outside the range of the survey: for various reasons, it was not possible to obtain a reply to the questionnaire from them (in most cases because of an inability to identify, or a delay in identifying, the figure entrusted with the compilation of the questionnaire).

TABLE 1. The participation of the university system in the survey

	Universities	%
Universities which filled in the questionnaire	59	76,6
Universities which did not filled in the questionnaire	18	23,4
Total	77	100,0

* Cristiana Rita Alfonsi, Massimo Carfagna, Donatella Marsiglia

The attention paid to e-learning by universities

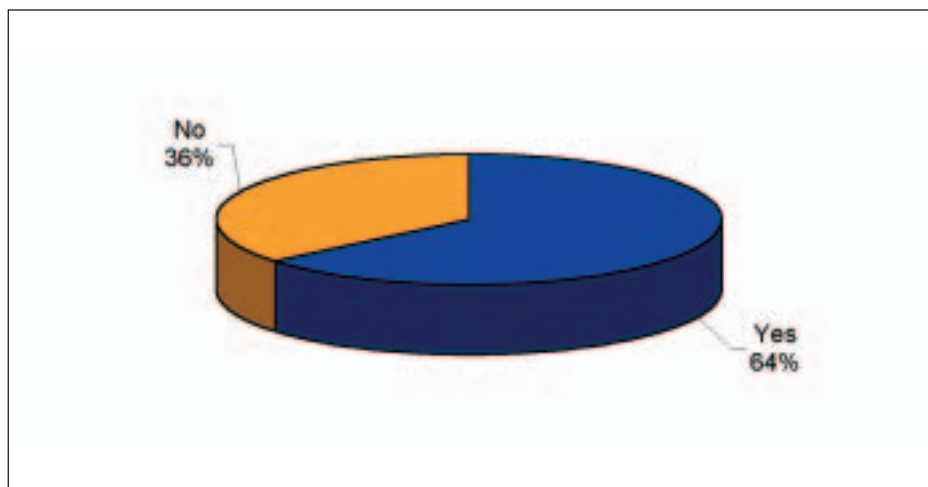
A university policy for e-learning

As pointed out in the introductory paragraph, the very fact that the survey launched by the CRUI constituted for some universities a first impulse towards identifying a figure responsible for e-learning is already in itself an aspect that is particularly indicative of the only recent relevance that this phenomenon has begun to enjoy within the Italian university world. Indeed, the subject of e-learning, which has been developed with increasing emphasis in universities in recent decades, has for the most part taken on the form of experiences that have been periodic or detached from an overall co-ordination at the level of the individual university themselves.

Graph 1, nonetheless, illuminates a context characterised by a strongly developing trend which involves two in every three universities moving towards a policy for e-learning. This is a fundamental premise for the development of an approach in this field promoted at a unitary level and no longer relegated to individual intra-university experiences. These last, although they today constitute the most extensive of the modalities with which e-learning has taken form, are progressively being channelled into a form of management which, although it is not yet centralised, aims at a general co-ordination that is intended to achieve a rationalisation of the activities of universities in this sector.

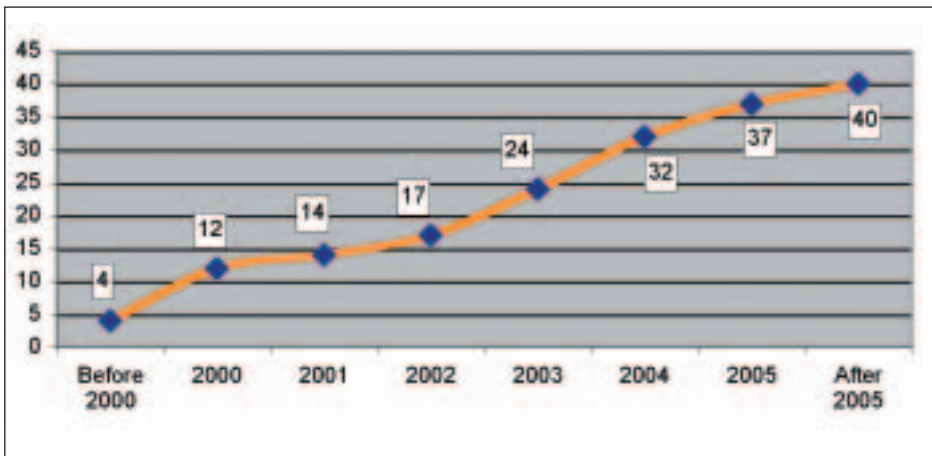
GRAPH 1. The adoption of an e-learning policy in Italian universities

(Percentages of respondent universities)



Graph 2, in relation to this point, describes the rapid spread in recent years of experiences involving the co-ordination of e-learning activity and indicates a strong increase in an awareness by the university world of the new opportunities for the development of teaching which in various ways draws upon the support of ICT.

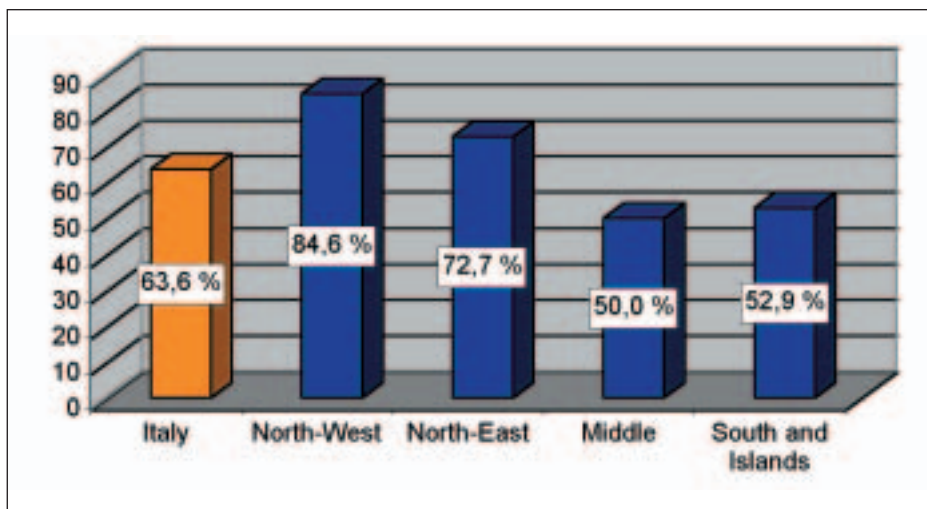
GRAPH 2. The spread of e-learning policies among the Italian university system (*accumulated number of universities per year*)



This trend, which only in the years of this century has taken on a major form, underwent a clear acceleration between 2002 and 2004, a period when the number of universities that began to set in motion a policy of e-learning for their own structures increased by almost 100%. It is worthwhile remembering that it was specifically in these years that the *CampusOne* project came into being, a project promoted by the Italian Conference of University Rectors (CRUI) that constituted a moment of great innovation for the university system by encouraging the universities to move towards a path of modernisation which, amongst its many features, also involved the promotion, and the sensitisation of the academic world towards new technologies and e-learning itself.

A break-down of the phenomenon at a territorial level provides a rather differentiated picture as regards the various geographical areas of the country, with the prevalence of the most dynamic universities as regards e-learning in northern Italy (GRAPH 3). The universities that are most behind on this front are those in the centre and south of Italy where, however, at least a half of the universities have decided to formulate a policy in relation to on-line teaching.

GRAPH 3. Adoption of an e-learning policy in universities by geographic area (*Percentage of respondent universities*)



Participation in consortia for e-learning

It is not unusual for Italian universities to take part in initiatives on the consortium model in relation to the world of e-learning and more in general of technologies as well.

By way of a premise to the analysis of this phenomenon, it should be observed membership of consortia of this kind should not necessarily be interpreted as an indicator of a maturity that has been achieved in relation to this subject. Whatever the cases, we are dealing here with a further element that brings out the sensitivity of universities towards emergent technologies that supplement teaching practices through the use of modern digital instruments.

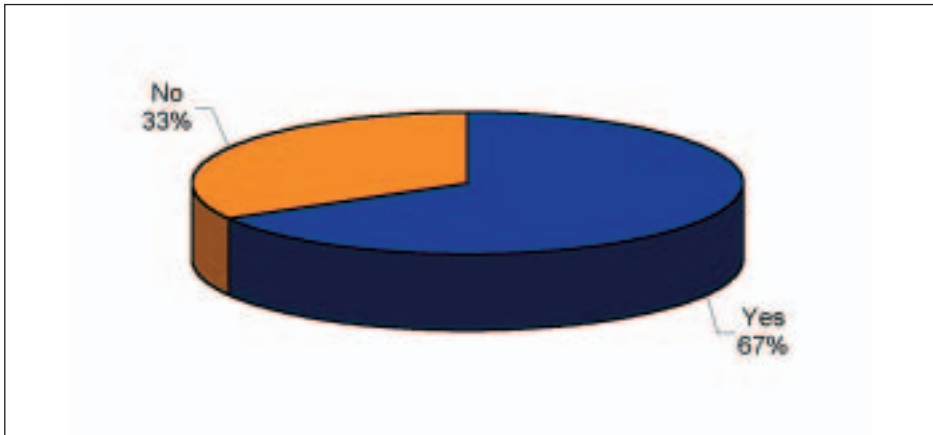
If understood as a sign of this kind, the level of involvement of Italian universities in partnerships dedicated to the subjects of ICT confirms, from the point of view of a general quantification of the dimensions of university e-learning, what had already emerged as regards the activation of a policy for e-learning within universities.

Beginning with the results obtained from the survey (graph 4) one can in fact estimate that two-thirds of the system take part in forms of co-operation linked, in part or in full, to the subject of e-learning through an adherence to initiatives launched together with other universities or with institutions of a different character.

A significant dynamism from this point of view is to be observed, given that

about forty per cent of the universities mobilised in these kinds of initiatives had taken part in at least two consortia.

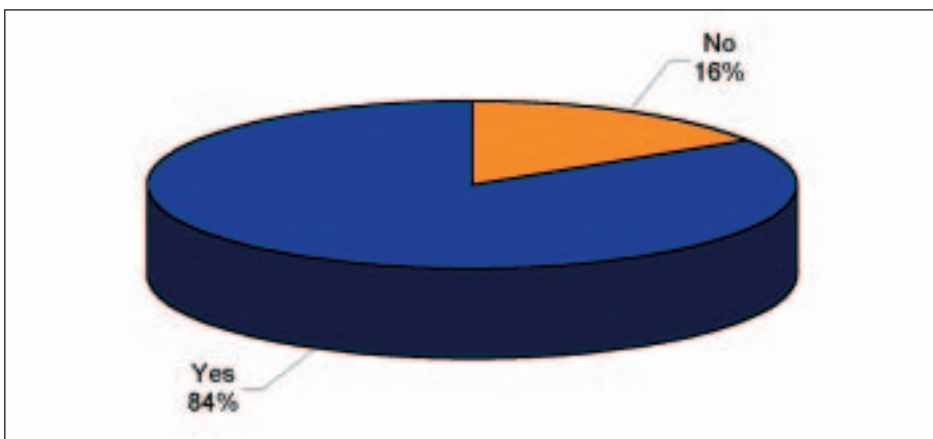
GRAPH 4. The participation of universities in consortia for ICT or e-learning *(Percentage of respondent universities)*



University e-learning centres

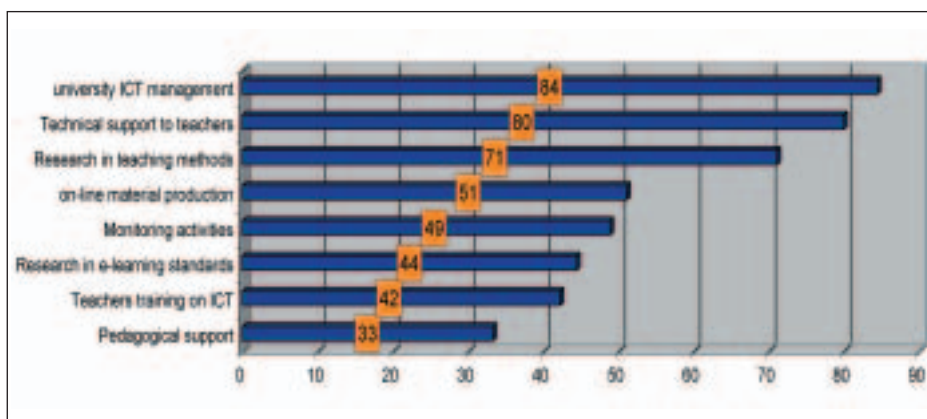
A further element that supports the thesis that there has been a progressive and convinced diffusion of e-learning in the academic world is the high presence of university structures that have functions that are strictly connected with the world of ICT. Almost all of the universities of Italy, in fact, have internal organisational units whose role involves a multiplicity of activities.

GRAPH 5. University centres for ICT/e-learning *(Percentage of respondent universities)*



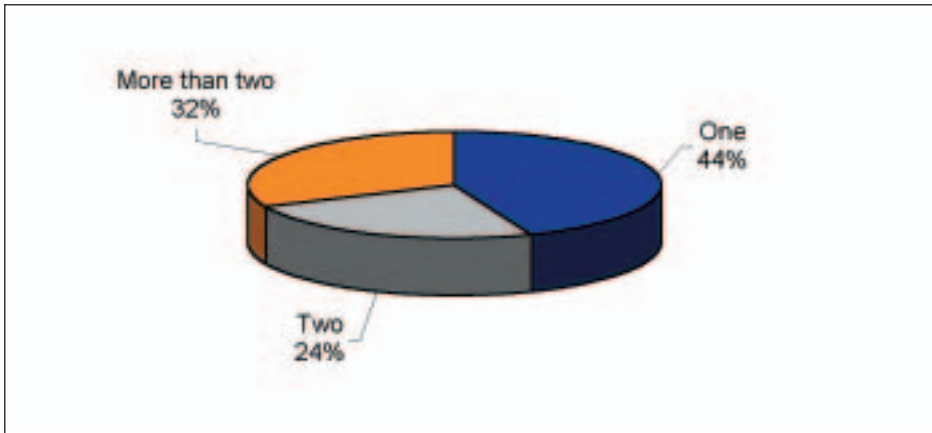
One can observe from graph 6 that these units are entrusted primarily with activities involving technical management and support for their universities, and with a decreasing frequency they deal with aspects that are more strictly connected with on-line teaching. In particular, whereas at least a half of these centres are involved in activities such as teaching research, the establishment of standards, and support for the drawing up of on-line teaching material, on the one hand, on the other the area where they are least present is that of support for teaching. This task, which is specific to only a third of the universities that have the structures considered here, is indicative of the gap that still has to be eliminated in order to achieve the creation of real and authentic centres for e-learning within the university world. It is, indeed, the joint presence of support for teaching and technological support that bestows upon these centres the necessary pre-conditions for them to be characterised to the full as structures entrusted with the development of e-learning activities.

GRAPH 6. The different functions of the ICT/e-learning centres
(Percentage of respondent universities, by function)



It should also be stressed that, in particular in the larger universities, more than one structure dedicated to realities connected with ICT exist side by side. A situation of this kind describes most of the universities, which even – in a fourth of cases – have at least three centres.

GRAPH 7. Number of university centres for ICT/e-learning in universities
(Percentage of respondent universities, by number of centres)



The other back office services

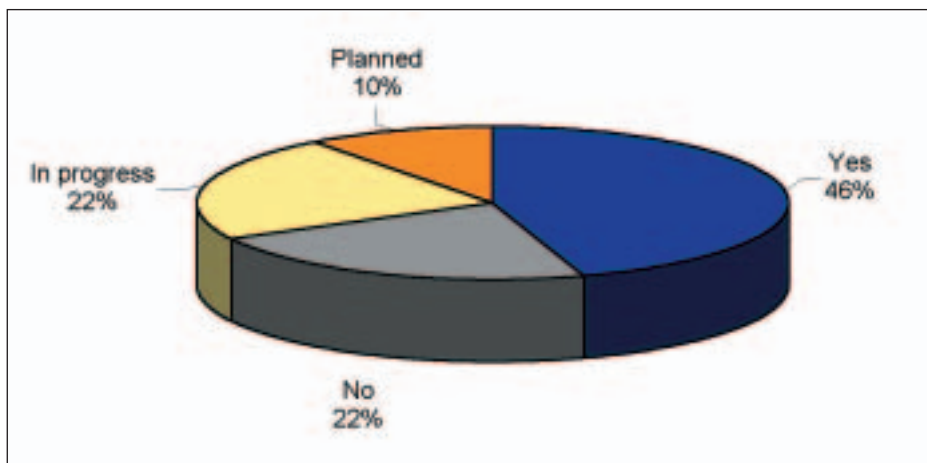
The change that is now underway in the direction of an increasingly widespread and effective use of the Internet for the purposes of learning represents a path that the university system cannot confine itself to treading by paying attention solely to innovations in the field of teaching. The introduction of on-line courses, in fact, brings into play also the need to structure for distance students a series of accessory services of an administrative character. If these were to remain accessible only to students actually present in a physical sense (presence students), they would enter into conflict with the spirit of a teaching methodology conceived for a target that, at least in part, is precluded from attending universities in a spatial sense.

The possibility of interfacing with the administrative offices of universities through information and communication technology routes is not for that matter a prospect that would benefit only those enrolled in e-learning courses. In particular in the larger universities, in fact, students often have to deal with long queues at the offices or with a system of information which, through the notice boards, only communicates with those who are *in loco*. This is a useful place to stress that the efforts of a university to equip itself with technologies do not target distance student but the entire category of enrolled students who, although they frequent the lessons in a physical sense, would obtain a notable qualitative improvement in terms of immediacy and flexibility in their access to teaching services and administrative services.

In this sense, the progressive spread of e-learning in the world of universities can have important consequences at the level of contributing to, and encouraging, a more general process of modernisation of the information services of universities. These constitute a fundamental resource in implementing effective forms of governance of the university system.

When we focus our attention on the results of the survey as regards the presence of on-line non-teaching services in correspondence to an educational supply which can also be accessed through Internet, a situation emerges that is characterised by a level of coverage that only partially meets the needs of the whole university system. The present 46% of universities that offer those who access on-line teaching the possibility of interfacing, at a distance as well, with their offices, (graph 8) will, however, be joined shortly by a further 22% of universities that are working on this front, and will increase further because of the 10% of universities which in the future have placed the development of these services on their agendas.

GRAPH 8. The implementation of on line administrative management of the courses (*Percentage of respondent universities*)



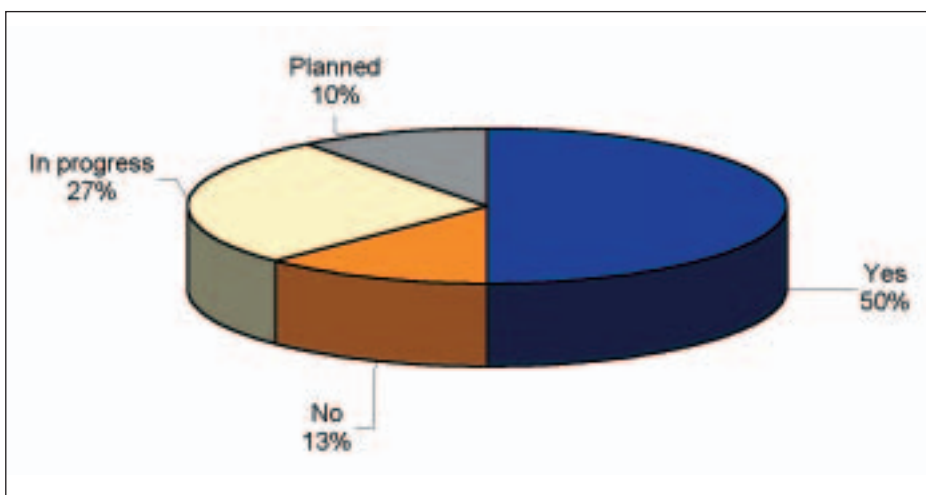
On line contents repositories

Within the context of the processes that support the creation of the on-line educational supply of universities is to be located the drawing up of instruments for the storing and cataloguing of the resources used for teaching on the Web. The creation of a repository in which teaching materials that can be accessed through the Internet are collected and classified is an element to be found in a half of the universities that took part in the survey (graph 9).

The adoption of such an instrument, however, is the common objective of a large majority of the universities which, in the future, will help to raise to almost 90% the number of universities that have this product.

GRAPH 9. The presence of a repository for the on line contents.

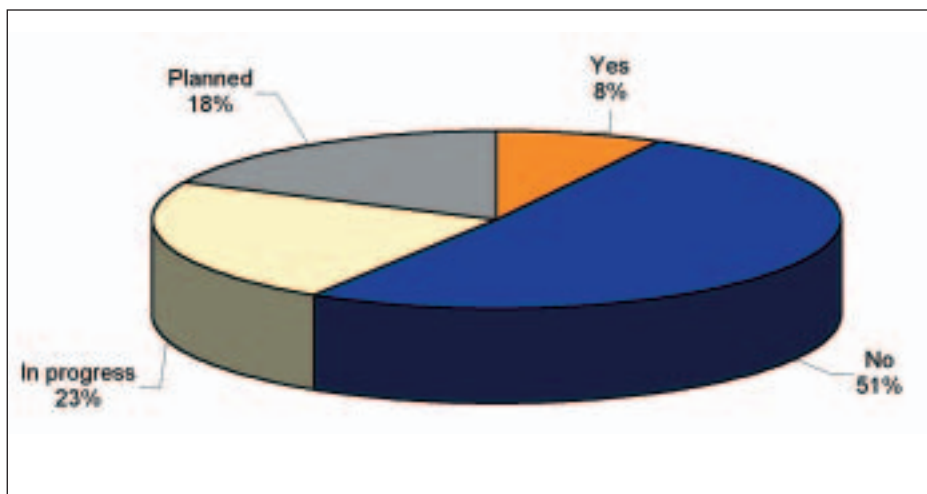
(Percentage of respondent universities)



The significant presence of co-ordinated procedures for the collection and organisation of teaching materials produced for access via Internet is not, however, matched, (or rather matched to a marginal extent), by a practice of sharing these resources with the world outside the university.

However, it is realistic to assume that the present scenario will undergo modifications in line with a more general process that over recent years has witnessed universities in Italy intensify their relationships with their local areas. Within the framework of these new prospects, marked, as they are, by greater dynamism on the part of the university world, the circulation of learning objects is seen both as a consequence of, and, on the other hand, as the manifestation of the wish for, greater openness to strategic dialogue between universities and to dialogue with forces outside the university world. In an approach which sees the role of universities increasingly located within the mechanisms of supply and demand in the education market, the presence of universities prepared to engage in the sharing or exchange of Web resources for teaching is quantifiable at the level of future prospects at a figure of 50% of the university system.

GRAPH 10. The possibility to share on line contents with other organizations (*Percentage of respondent universities*)



Research on e-learning

The growing establishment of e-learning in the academic world is not to be deduced solely from a supply of on-line education that is growing rapidly. It is also attested to by the increasingly marked attention that university research pays towards new teaching methodologies.

Graph 11 does not only register how a half of universities are already presently active on this front. It also provides further information on the presence of e-learning on the agendas of university research that is destined to grow further in the future.

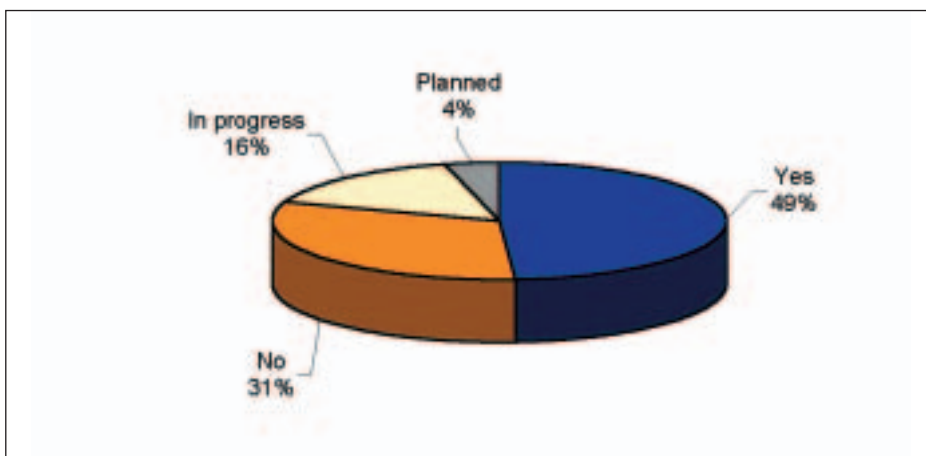
This subject, for that matter, in intertwining the skills and expertise of both teachers and specialists in information and communication technology, lends itself to being explored from many points of view, which, of necessity, should be brought together in an integrated approach.

In fact, it is not unusual to still register today an incomplete convergence between the ways of attacking the questions that have been opened up connected with e-learning carried forward by those who belong to the humanities, on the one hand, and by specialists in information and communication technology, on the other.

Research on standards, the exclusive domain of the information sciences, and experimentation with teaching models, the prerogative of experts in education, are, however, subjects of such relevance for e-learning that only

with difficulty can they be placed on a scale of priorities. The action of universities, therefore, should be directed towards solutions involving an interdisciplinary approach that give equal rights of citizenship to the contributions of these two scientific sectors in the creation of effective research activity.

GRAPH 11. E-learning as a subject of university research
(Percentage of respondent universities)



Students, lecturers and e-learning

E-learning and students

The statistics on the number of students that use university distance education refer to a phenomenon that is still clearly circumscribed: putting together the first three of the four bands identified in table 2, it is to be observed that for a large majority (80%) of the universities involved in the survey, the size of the target made up of the recipients of distance education is not above 10% of the total number of their enrolled students.

At a specific level, the size of the phenomenon appears to be still on a reduced scale if one takes into consideration the fact that for a fourth of the universities that replied to the questionnaire the users of distance education are less than 5% of the total number of their enrolled students, and in addition that there were twelve universities that registered a total absence of distance students.

On the other hand, a significant number of students who draw advantage from forms of distance teaching (over 10% of the enrolled students in the

university involved) characterises the remaining 20% of the universe considered, a part made up of universities that engage to a more appreciable degree in videoconferences or teaching on the Web.

TABLE 2. The involvement of students in distance education

% of students that use distance education	Number of Universities	% of Universities
<i>None</i>	12	30%
<i>Less than 5%</i>	10	25%
<i>Between 5% and 10%</i>	10	25%
<i>Over 10%</i>	8	20%
TOTAL	40	100%

If, on the other hand, we move to examining the extent to which the new technologies are establishing themselves as instruments with which to support traditional forms of teaching, a markedly different picture emerges.

In some universities, students who have teaching material available to them on Internet, or services that complement the lectures held in the lecture rooms, at the most make up 10% of the total of enrolled students. However, this is a situation that involves only certain universities (17.5% of those who took part in the survey), where flanking teaching in the lecture rooms with resources provided on the Web is available only to a narrow band of students.

An opposing picture is to be encountered in the case of those universities (equal to 15% of those examined here) where almost all of the students can access the Web to receive information or obtain teaching resources by downloading from the website of the course supplementary material for courses and study material or by taking part in on-line forums.

One may estimate (putting together the third and the fourth bands of table 3) that opportunities of this kind involve at least a half of students of about one university in every three.

However, on this front as well there are broad margins for improvement on the part of universities, given that about a half of them provide on-line supplementary services for teaching for a band of students which, although the numbers involved are not negligible, does not even reach a half of the overall population of their own enrolled students (the quota varies from 10% to 49%).

TABLE 3. The involvement of students in ICT enhanced education

% of students who use presence education supported by ICT	Number of universities	% of universities
<i>Less than 10%</i>	7	17.5%
<i>Over 10% but less than a half</i>	21	52.5%
<i>At least a half but less than 80%</i>	6	15%
<i>Over 80%</i>	6	15%
TOTAL	40	100%

Despite the marginal role of distance students within the overall university population, but in line with the increasing quota of enrolled students who access the Internet sites of their various courses, table 4 clearly illustrates how a large part of Italian universities have by now become committed at a practical level to offering their own enrolled students a series of services that are closely bound up with the growing opportunities provided by the encounter between teaching activity and new technologies.

The recent dynamism of Italian universities that has been registered when it comes to equipping themselves with technologies for teaching and for relevant connected services, when considered together with the continuance of a narrow category of students who are specifically distance students, indicates a choice made by the university system directed in the first instance towards enriching and appreciating the educational supply of a traditional kind, supplementing it with the benefits brought by the utilisation of ICT, and directed solely in the second instance towards developing solutions that are provided entirely on-line.

As observed previously in this report, the survey was able to establish that two universities in every three is the quantifiable measurement of the scale of the general interest within the university system in matters relating to new technologies to be used for teaching. This measurement was based upon the presence of a *policy* in relation to e-learning inside universities. In table 4 the extent of attention paid to services for students in this field has in substantial terms the same proportions, being the prerogative of about two thirds of universities which have begun initiatives for their own enrolled students such as making available an e-mail address, the activation of services involving technical support, and training in relation to the use of ICT. This last service, in particular, appears destined to become grow further in the future given that to the current 70% of universities that are already active in this field, another 15% will be added shortly.

The subsidised purchase of computers and computer technology equipment demonstrates, on the other hand, a possibility that is at the present time relegated to the students of a narrow circle of universities, even though, and not only in the university world, our country has witnessed in recent years policies to encourage the purchase of PCs and universities themselves have begun to look with attention at the possibility of presenting themselves on the market of technologies through collective agreements of greater negotiating impact as regards sellers.

TABLE 4. The opportunities and services offered to students in the ICT
(Percentage of respondent universities)

Universities that act so that students can:	No answer	Yes	No	Being implemented	Envisaged in the future	Total
Purchase technologies	15.3	13.6	54.2	8.5	8.5	100.0
Have an e-mail address	11.9	64.4	8.5	11.9	3.4	100.0
Receive technical support	13.6	66.1	16.9	1.7	1.7	100.0
Have training as regards ICT	13.6	69.5	1.7	8.5	6.8	100.0

E-learning and lecturers

It is a by no means easy undertaking to provide a precise quantification of the number of university lecturers who take advantage of ICT for their courses since the modalities (and the intensity) with which it is possible to use the various technologies for the preparation and giving of lectures are very diversified.

However, an analysis that does not dwell upon the complex structure of the use of teaching technologies and focuses only on the involvement of lecturers in activities that involve distance education depicts a state of affairs characterised by a still very limited quota of lecturers involved in activities connected with a form of teaching that takes the place of traditional lectures in university lecture halls.

Significant percentages – that is to say where distance lecturers are above 5% of the whole teaching body of the university – are to be found in only ten universities of those that provided answers to the survey carried out by the Observatory (table 5).

TABLE 5. The involvement of lecturers in distance education

% of lecturers who are involved in distance education	Number of universities	% of universities
<i>None</i>	4	11%
<i>Less than 5%</i>	21	60%
<i>Between 5% and 10</i>	7	20%
<i>Above 10%</i>	3	9%
TOTAL	35	100%

The picture changes its configurations if we try to quantify the situation of lecturers who, although they dedicate themselves the traditional modalities of teaching, experiment side by side with their lectures in the lecture hall the possibility of supporting their teaching activities through the addition of resources that can be accessed on-line.

From this point of view, what has already been observed in relation to students (see table 3 above) emerges again on the lecturing front in almost similar proportions.

In one university in every three, the lecturers, who use Internet as an instrument to support their presence teaching, make up a majority of the teaching staff. However, the most widespread situation, described by over a half of the universities who took part in the survey, was that where the percentage of lecturers who used the Internet to support their activities in the lecture hall was above 10% of the teaching staff but anyway below a threshold of 50%.

TABLE 6. The involvement of lecturers in ICT enhanced education

% of lecturers who are involved in presence education supported by ICT	Number of universities	% of universities
<i>Less than 10%</i>	7	16.3%
<i>Above 10% but less than a half</i>	24	55.8%
<i>At least a half but less than 80%</i>	6	14%
<i>Above 80%</i>	6	14%
TOTAL	40	100%

On the other hand, universities have a series of services that demonstrate a clear interest in the sensitisation and training of lecturers in relation to new technologies. The capillary presence of services of electronic mail and technical support as well as the increasing opportunities in training people in the use of Web and computer instruments are significant indices of this trend (table 7).

Table 7. The opportunities and services offered to lecturers in the ICT field
(Percentage of respondent universities)

The university acts so that lecturers can:	No answer	Yes	No	Being implemented	Envisaged for the future	Total
Purchase technologies	10.2	49.2	25.4	10.2	5.1	100.0
Have an e-mail address	5.1	94.9	0.0	0.0	0.0	100.0
Receive technical support	5.1	89.8	3.4	1.7	0.0	100.0
Have training as regards ICT	8.5	69.5	10.2	3.4	8.5	100.0

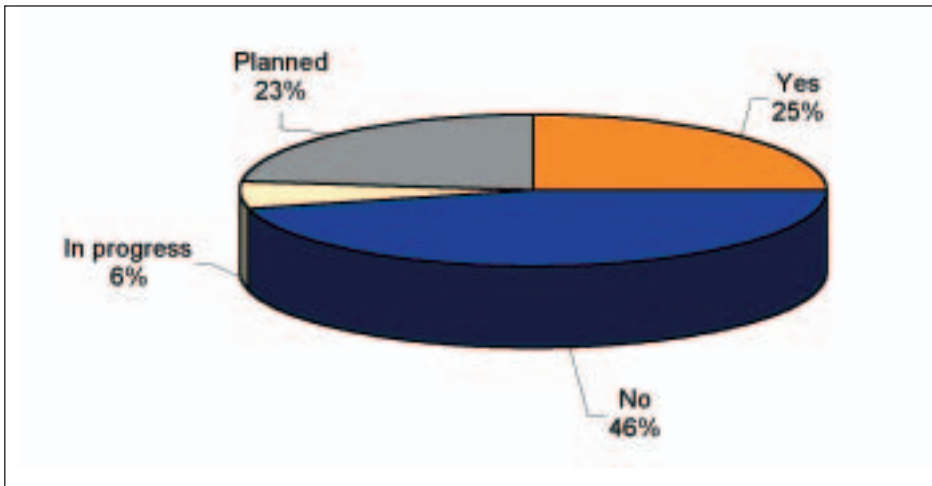
It should also be taken into account that lecturers do not constitute the only category involved in on-line education. The specific characteristics of these kinds of teaching initiative have obvious repercussions on the need to bring into play a series of skills with which universities should equip themselves. Tutors, technicians, Internet specialists, computer engineers and multimedia designers make up the principal professional profiles that are called into play by e-learning. Because these are key actors in the development of the phenomenon that we are investigating, universities themselves have been some of the first institutions to mobilise themselves in offering opportunities of training, connected with the acquisition of the specific skills specific to these figures. In addition, and especially regards the professions connected with the world of Internet, we have before us a flourishing supply of specialization courses (post-degree), flanked by a certain number of degree courses which often utilise the methodologies of e-learning. This is a solution that appears more appropriate than ever given that students are subjected to the use of the same instruments that will form as part of their future work.

It should be observed that at the level of law and directives Italy still does not have a system that regulates in a detailed way the role of lecturers and other figures who are involved in e-learning and suitably takes into account the specific features of these roles and the increase in workloads that such features involve during the stage of the preparation and the updating of on-line teaching resources and services.

In the present state of affairs, therefore, the involvement of lecturers also takes place through the conferring of financial incentives that universities give to those lecturers who choose to embark on teaching experiences that involve the possibilities offered by Internet. The situation referred to here is applied in a little more than a quarter of the universities involved in the survey, and in these universities specific financial bonuses are given to lecturers which agree to experiment with e-learning.

However, if one includes those universities that are presently preparing initiatives to provide financial support to lecturers, and if to these are also added those universities that have expressed their intention to move in this direction, one may assume that the practice of promoting the involvement of lecturers in on-line activity through the provision of financial incentives will become the prerogative of a majority of universities.

GRAPH 12. The use of financial incentives to motivate lecturers for adopting e-learning (*Percentage of respondent universities*)



Objectives and obstacles

Objectives related to the adoption of e-learning

Amongst the questions posed to the referents of the universities on e-learning, of especial importance was that relating to the objectives that it is their intention to pursue through the use of forms of on-line teaching. This is a question that provides us with important elements in understanding at a more general level what vision the academic world has of e-learning and in what ways universities relate to this innovative expression of university teaching.

A comparison that takes into account the first three answers most frequently given by the universities (graph 13) allows us to formulate a first preliminary observation: the equation that is often employed which assimilates distance education with e-learning is here contradicted, or at least partially contradicted, by the fact that the possibility of connecting with

students who also work – typically the most suitable target for an educational supply not provided through presence – is placed as the third preference.

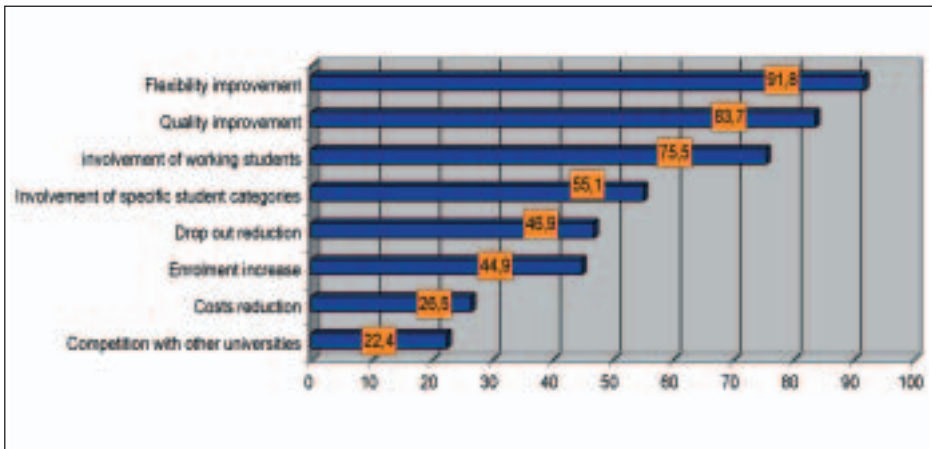
Although it is to be noted that 69% of the universities that took part in the survey are interested in this opportunity, it should be observed that at the top of the classification of the objectives that are aimed for through the use of e-learning there are in reality two motives, namely motives connected with greater flexibility in access to courses, on the one hand, and with an increased quality of learning that takes advantage of ICT, on the other.

The tandem ‘flexibility-quality’, which is thus at the top of the aspects that are motivating universities to move towards the frontier of e-learning, in addition to being a positive sign of the trust that universities place in new forms of learning mediated by technologies is also at the same time a testimony to an approach that only at a residual level considers the possibility of defining itself as total distance learning but which in reality appears to be directed towards improvement in the accessibility and the qualitative enrichment of traditional teaching.

This is not evidence of small importance: it also offers a possible perspective on the future prospects of a subject that with all probability is not destined to be characterised as a trajectory parallel to the mainstream of traditional teaching, which, indeed, will continue on its own path forward. On the contrary, we have the elements to believe that the influence of technologies on how teaching is constructed will open doors to a future scenario, which, however, is certainly not imminent, in which the on-line part will be an unfailing attribute of the entire educational supply of higher education.

The other headings belonging to the spectrum of objectives at which universities aim by engaging in e-learning are less relevant in the eyes of universities, having importance, in fact, for less than a half of them. However, two objectives that four in every ten universities indicate as aspects connected with their presence on this specific front of educational supply are not negligible: the increase in enrolments that e-learning is able to generate in universities that adopt e-learning, on the one hand, and the potential effect of limiting the phenomenon of the abandonment by students of their studies that be gained by those who access teaching on-line, on the other.

GRAPH 13. The objectives pursued through the use of e-learning
(Percentage of respondent universities, by objective)

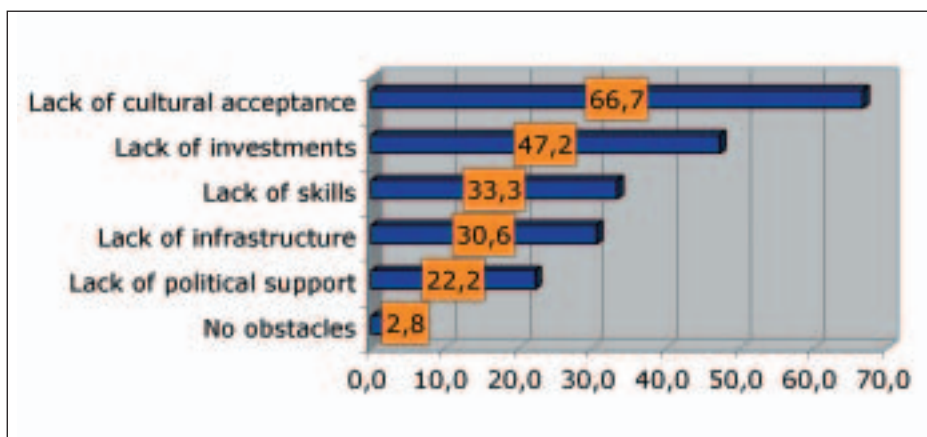


Obstacles to the diffusion of e-learning

In the present state of affairs there exists a series of factors that act as elements with a braking effect on the full diffusion of e-learning in the university world. Amongst these, the inadequacy of financial resources and the relative insufficiency of investments are almost to be taken for granted. From this point of view, e-learning does nothing else but share with numerous other subjects of the university agenda a by now structural shortage of financial sources which appears to be increasingly penalising because it takes place within a framework that is witnessing a substantial increase in the number of students because of the reform that has taken place in the structure and organisation of teaching

The creation and the provision of teaching modules on the Web with all the elements necessary to make them an effective e-learning experience, and thus endowed with interactive contexts of on-line learning and provided through the employment of learning objects, is an undertaking that involves costs that are not insignificant because they, of necessity, involve moreover a high number of professional figures who are indispensable to this kind of activity. It is no accident, therefore, that some of these prominent experiences of the contemporary scene of university e-learning have come into being through agreements that universities have signed with forces of the business world, and primarily with companies that are protagonists in the market of technologies.

GRAPH 14. The obstacles to the use of e-learning
(Percentage of respondent universities, by obstacle)



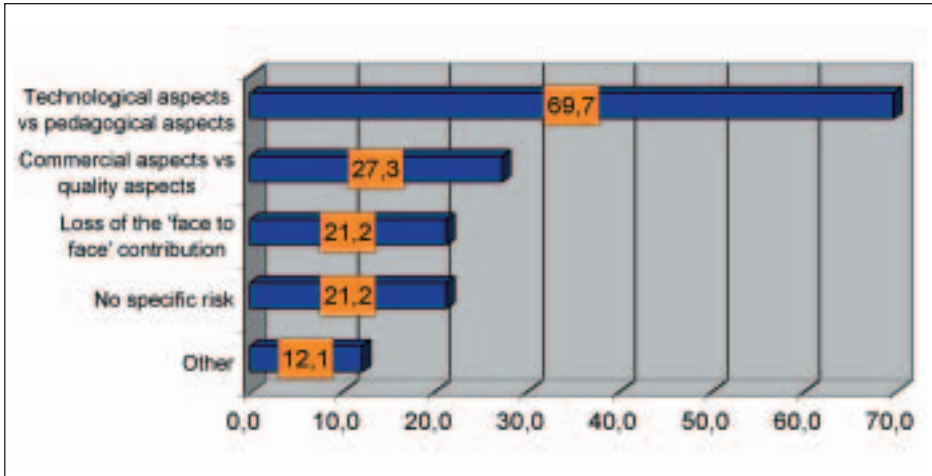
But the aspect that most weighs upon the pathway of education in an electronic version lies in realities within universities themselves and comes from an approach of diffidence in the part of some lecturers towards digital innovations for teaching use.

Reactions involving closure on the part of the academic world faced with changes on this scale should, however, also be read with reference to an approach of substantial immobility which has for decades witnessed teaching still anchored in historically unaltered models. In other words, there is at work a more general resistance to innovation which, however, beginning with the recent introduction of the three-year degrees, has of necessity begin to take steps back, in favour of a progressive thinking anew about approaches to teaching. We thus find ourselves faced with an inaugural season of overall changes which almost physiologically nourish, side by side with impulses to development, expressions of scepticism and contrariety as well.

To the general context of such outlines there is then added the puzzlement provoked in a specific way by the encounter between technologies and teaching. In exploring the fears that most frequently trouble the sceptical part of academic staff there emerges, in particular, a critical reading that is concentrated on the risks of a potential overturning of the respective roles of teaching and technology. This last, which should be correctly conceived as being at the service of the first, runs the risk, with its own imperatives, in the scenarios held up by the most diffident, of taking precedence over the theories of learning which would be placed in a subordinate position, with

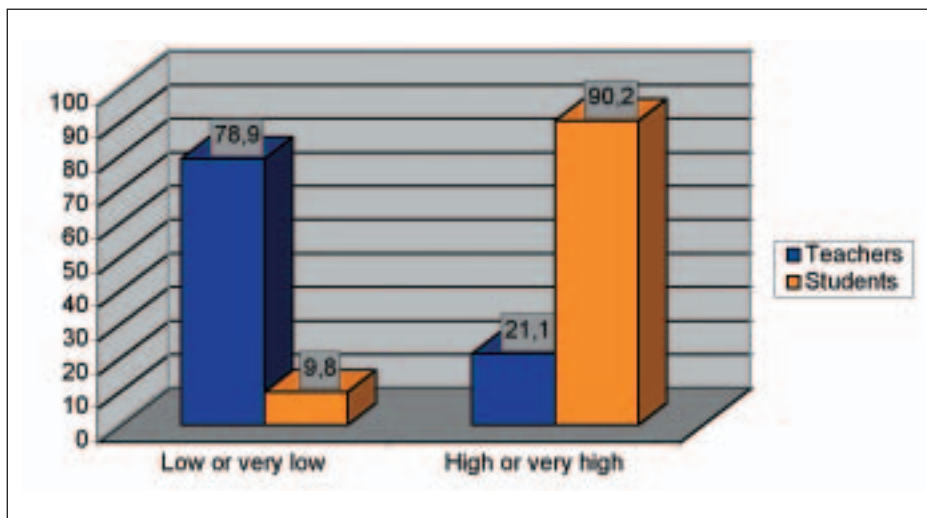
resulting consequences involving the qualitative impoverishment of the educational supply.

GRAPH 15. The potential risks attributable to the diffusion of e-learning
(Percentage of respondent universities)



Whatever may be the reasons that lie behind a substantial coldness by a non-negligible part of lecturers towards e-learning, there remains the fact that one may register as regards students orientations that are in a totally opposite direction. The survey was able to compare the different approaches of the two categories to the use of ICT by asking those who compiled the questionnaire to express an opinion on the level of cultural acceptance of such technology in their universities on the part of lecturers and students respectively. A picture emerged, represented by graph 16, in which a substantial antithesis stands out between the openness and familiarity with which students approach these new technologies, on the one hand, and the closure and lack of experience of the lecturers, on the other.

GRAPH 16. The cultural acceptance of students and lecturers towards e-learning (*Percentage of respondent universities*)



Economic aspects

costs and investments

The development of e-learning policies in the field of their own educational supply is perceived by the majority of universities as an investment that weighs to a significant extent (35% of cases) or anyway to an appreciable extent (29% of cases) upon the costs born by them. Only one university in every five believed that it was possible to draw benefits from a financial point of view by acting on the front of on-line teaching. Indeed, where distance education is applied to the provision of contents that are viable or reproducible in standardised form (some modules for the learning of foreign languages or studying for the obtaining of the ECDL are examples of this), it is legitimate to expect an overall saving by using multimedia supports in the place of presence lectures.

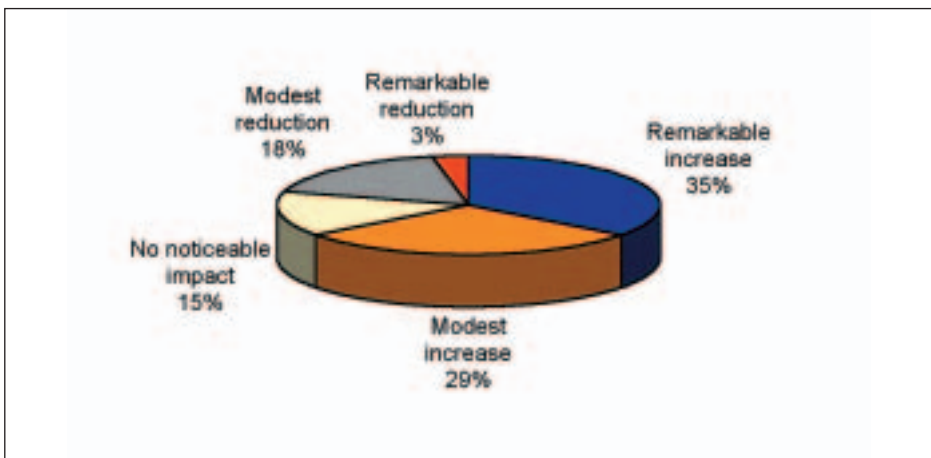
The same logic is applied to company training which wants to provide to a vast target of users a series of contents characterised by a substantial uniformity, thereby achieving in this case a decrease in costs generated in large part by the elimination of the travelling costs of both teachers and the recipients of educational initiatives.

However, most of university education is based upon the transmission of knowledge and this is hugely distant from possessing the requirements

requested for company training. On the contrary, one is dealing here with knowledge of a high degree of complexity, the subject of an unceasing process of completion to which it is subjected by the advance of scholarly and scientific research. It is to be taken for granted that educational contents of this kind are to a very small extent linkable to models whose economic convenience derives specifically from the invariability and the reusability of knowledge – factors that allow a progressive reduction of marginal costs.

GRAPH 17. The impact of e-learning on the university expenses

(Percentage of respondent universities)



The causes of an economic burden associated with the launching of e-learning experiences are not limited, for that matter, to a lack of being able to trace back the production of contents for on-line university education to within dynamics linked to economies of scale. Indeed, equal attention should be paid to the additional work burdens that the technical and academic staff have to face both through the creation of teaching material that is planned *ad hoc* for access on Internet and that the regular (indeed almost daily) work of updating that an on-line presence imposes, also introducing, for that matter, an unprecedented work activity for lecturers. Amongst the other relevant headings which work to increase costs as regards the establishment of on-line courses there principally figure those connected with infrastructures and the information and communication technology equipment that are required by activities that involve the planning, creation and provision of teaching on Internet.

Quantifying the size of investments met by Italian universities for e-learning has shown itself an operation that can be engaged in only in terms

of aggregate observations on the basis of partial values. The incompleteness of the information that is available – and as a result the need to rely upon estimates in order to draw near to the real size of the figures involved – constitute circumstances attributable to rather widespread causes whose origins it is not difficult to understand.

One may assume, first of all, that some of the costs that have been met are in reality headings of transversal expenditure in relation to the various areas of the activities of universities and that because they are not entirely attributable to investments only for e-learning are thus not immediately quantifiable. The technological infrastructures, for example, which nonetheless play a not negligible role in determining the set of resources involved in e-learning, are often included in an investment that refers in large part to the equipping of research centres and the implementation of information systems.

In the same way, excluding personnel involved solely in e-learning activities, the majority of human resources that take part in the various processes directed towards the provision of on-line teaching also spend a part of their working time in activities that are totally extraneous to this field, thereby clearly complicating the possibility of reaching a precise attribution of costs for activity confined exclusively to e-learning.

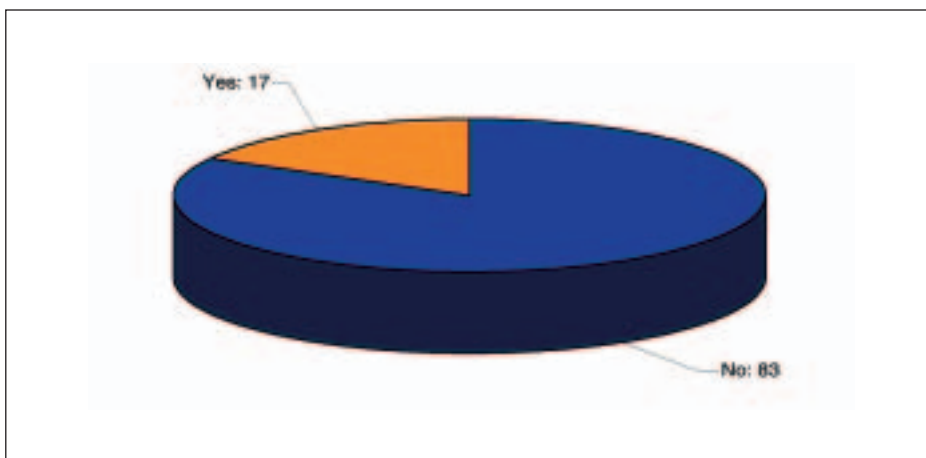
A second set of reasons, that have allowed only a summarising look at the subject of the financing of e-learning, lie in the already referred to fragmentary ways in which, in the contemporary context, many of the initiatives that have been engaged in have in fact been implemented within universities. Where the examples of teaching on the Web experimented with by certain lecturers have been carried forward outside an overall and centralised co-ordination, the attempt to determine the sum of costs that have been met overall by the university has been more complicated.

Albeit with these limitations, some points worthy of note emerge from the survey as regards the financial commitment of universities on behalf of e-learning. Of the few tens of universities that were able to provide some figures, it is to be observed that thirteen universities declared that they spent over 500.000 euros a year on e-learning. As a proportion of the total sums available, it emerges that in eight of these cases the expenditure on e-learning is between 2% and 6% of the whole annual budget of the university. In reality, however, in the majority of Italian universities a lower sum is spent on e-learning and makes up a proportion of annual budgets of less than 1%.

An attempt was then made to explore the nature of the various sources of funding and the relative contributions made by these sources. In the survey, however, there are only ten cases where a detailed account was given of multi-source funding. Although we are in the presence of rather small figures, it emerges, however, that almost all of these universities (eight out of ten) took advantage of funds from their regional governments and of funds from the European Union. However, these headings involve constantly lower sums than those of the specific resources of an ordinary kind intended for activities that envisage the use of ICT for teaching purposes of the universities concerned. A further form of funding lies in the payment of enrolment fees which in 17% of universities are specifically increased, compared to the average fees, for those students that access courses that are provided, largely or totally, using Internet.

GRAPH 18. Higher fees for the on line students.

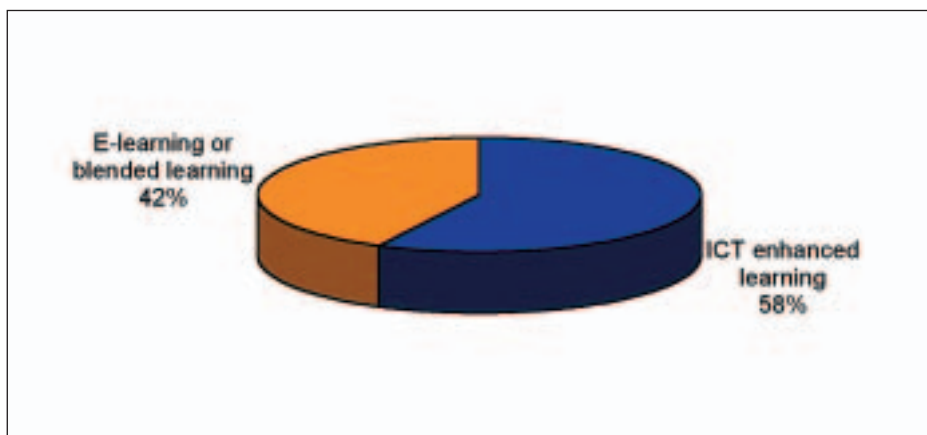
(Percentage of respondent universities)



From the point of view of the destination of funding, two principal spheres can be identified that are allocated resources of a kind considered here: enhanced ICT teaching on the one hand, and – considered together – e-learning or blended learning, on the other. This confirms a vision of the state of affairs which involves a significant part of universities being more sensitive, in terms of investment as well, to the technological requirements of teaching than to the drawing up of on-line educational supply. However, we are not here in the presence of a net imbalance in this direction given that the number of universities whose funding for e-learning is above that for enhanced Web teaching amounts, anyway, to 42% of all universities.

GRAPH 19. The funding for e-learning and web enhanced learning.

(Percentages of universities which spend the majority of the funding in e-learning or in ICT enhanced learning)



The courses surveyed

The questionnaire submitted to universities, through the compilation of a specific section, offered universities the opportunity to describe individual courses whose teaching supply was effected by using, with varying degrees of emphasis, information and communication technology (ICT). This is a strongly heterogeneous world both from the point of view of educational supply (three-year degrees, specialist degrees, master's degrees etc.) and from the point of view of the typology of the use of ICT that is adopted (which ranges from authentic e-learning to the supplementary use of technologies that flank and support the stages of presence teaching only at a marginal level).

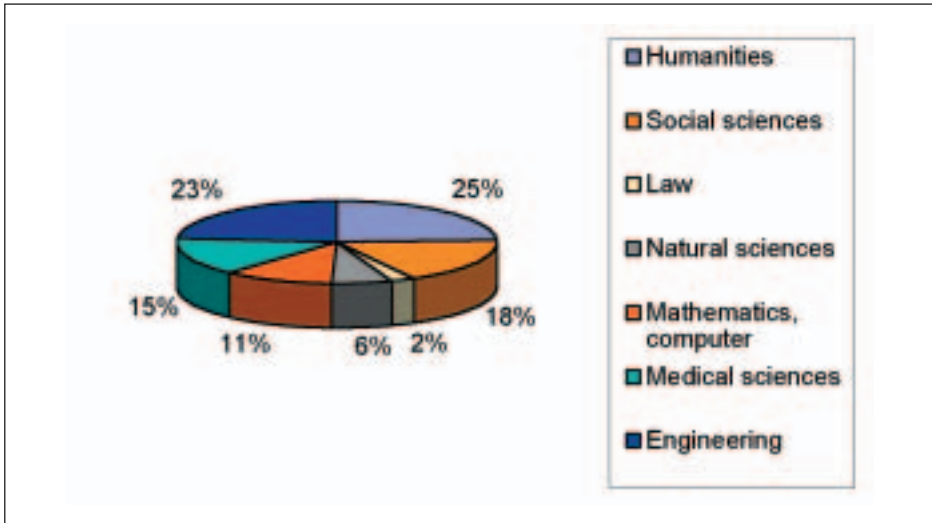
Although the data that was collected was the outcome of a spontaneous process of compilation on the part of the various heads of courses (they do not, therefore, constitute a sample constructed with statistical rigour), the set of information gathered nonetheless allows the deducing of useful elements as regards the subject under examination.

Fields of study

One can note at the outset how the disciplinary areas of the initiatives subjected to the inquiry involve the primacy of the area of engineering which, however, is not the protagonist of real and authentic hegemony in relation to the other fields. The area of humanities and the area of the social sciences are also represented to a significant degree. These last, in particular, obtain

further positions in the field of the post-degree supply (typically the master's degrees), a specific segment where there is also a significant presence of experiences that belong to the area of medicine.

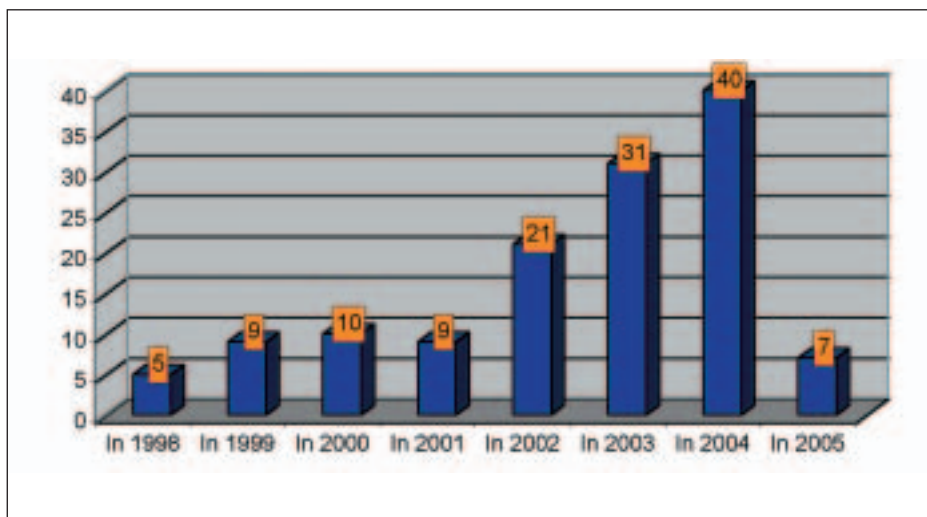
GRAPH 20. Fields of Study of the courses surveyed



The start of on line didactic services through the years

In parallel with the activation of numerous degree courses of a traditional kind provided 'in presence' which, following the reform of teaching systems, began in a major way in the first years of this century, on the front of on-line teaching there was a great flurry of initiatives took place specifically in the years 2002-2004. It was during this period, in fact, that the inauguration of the on-line supply of those courses that are examined here was concentrated. As already registered at an individual university level in terms of a progressive diffusion of the policy of e-learning, the field made up of these courses offers encouraging signs as to the growing establishment of ICT for teaching purposes. One may note, in fact, that the strongly decreased figure for 2005 does not mark an inversion of the trend but was exclusively the effect of the temporal horizon of the research that specifically in 2005 was brought to a close, without it being possible to provide an account of what had been achieved during the whole of that year.

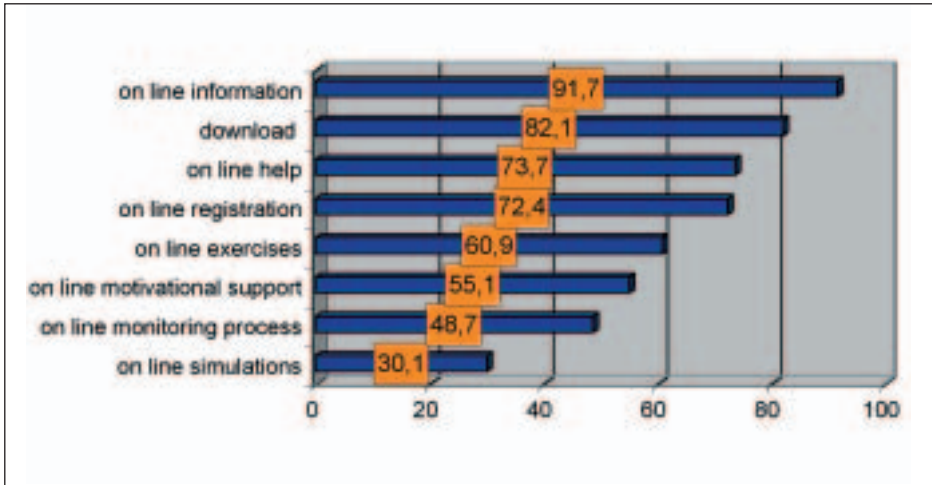
GRAPH 21. The start of on line didactic services through the years
(Number of surveyed courses)



The on-line services

Most of the courses that were surveyed had implemented some basic services on the Web: after the presence of communications and information on-line (which was far and away the most widespread element), it was the possibility for students to download teaching materials from the Net that was one of the aspects that most described these courses. To remain within the field of services provided through the Net that are most closely connected to the study activity of enrolled students, there was a sizeable presence of opportunities to gain access to on-line exercises which, although involving most of the experiences here examined (six out of every ten), nonetheless is a prerogative that is less widespread than the mere downloading of teaching resources. Even more circumscribed is the possibility for students to engage in real and authentic on-line simulations, activities that are linked to a more evolved planning of e-learning and as such confined to only 30% of the courses subjected to the inquiry.

GRAPH 22. The on line services adopted by the courses
(Percentage of surveyed courses)



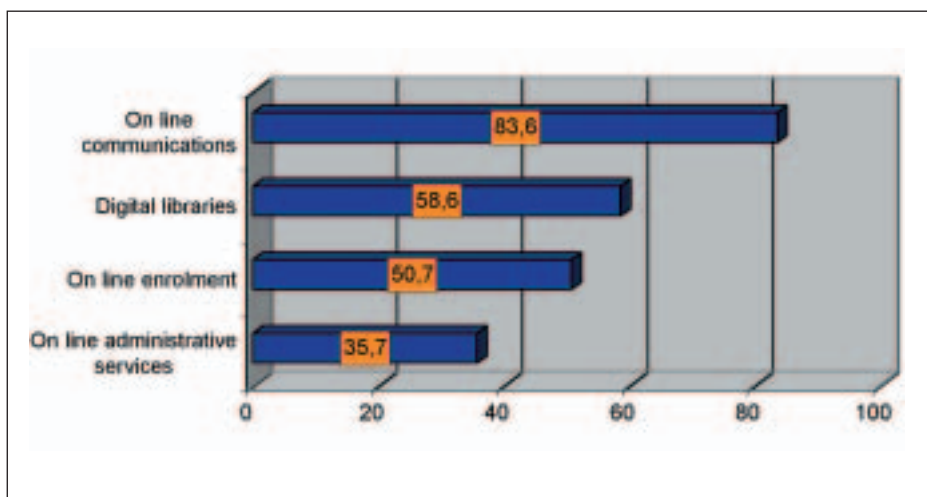
Other on-line services

A series of extra-didactic services available on-line which support study activities *via* Internet are made available in varying extents by the courses under examination.

The practice of communicating information as a service on the Net is increasingly evident as a goal that is near to involving a very large proportion of the courses of study, but when observing graph 23 this practice is still accompanied by a certain delay in the implementation of other fundamental services. Indeed, one can observe that whereas in at least a half of the experiences examined there was a use of the Internet as a channel for enrolment or access to library resources of a digital kind, the possibility of engaging in administrative procedures and activities of a bureaucratic kind were at levels that are decidedly more marginal (a little more than a third of the courses examined).

GRAPH 23. Other on line services adopted by the courses

(Percentage of surveyed courses)



The Instruments for On-line Teaching

The different extent to which the courses surveyed use technologies for teaching purposes can be better understood with reference to an observation that takes into account the individual instruments that are used. In addition to providing a picture of the technologies that are most in use in the university world they also allow a better understanding of the composition of this heterogeneous area of teaching experiences that have been subjected to the survey.

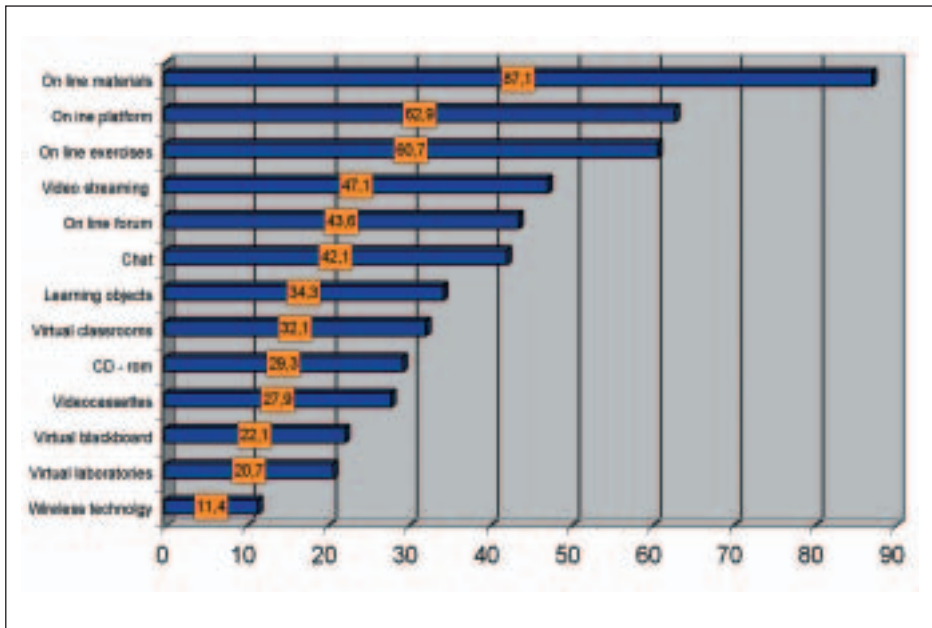
Amongst the various elements compared and contrasted in graph 5, only three are involved in the majority of the courses surveyed: the opportunity that is most often followed to make available the potentialities of Internet to students is the placing on-line of teaching resources. This is followed on the list by the presence of a platform for the management of on-line teaching activities. The provision of exercises and self-assessment tests that students can follow on-line is a rather widespread policy in the field of the experiences that were examined by the survey.

The on-line forums and chats are services which, although identified in a half of the courses that took part in the survey, stand out as instruments whose use is by now by no means negligible. The spread of video-streaming technologies which in an indicative way are today more used than video cassettes is on a similar scale.

The number of courses that practice forms of on-line teaching that can be defined in a stricter sense as authentic e-learning experiences make up a third of the universe that was examined. Indeed, graph 5 demonstrates that Internet teaching which envisages a distance participation organised in virtual lecture halls and which employs learning objects is provided in a number of courses that is between 32% and 34% of the total surveyed.

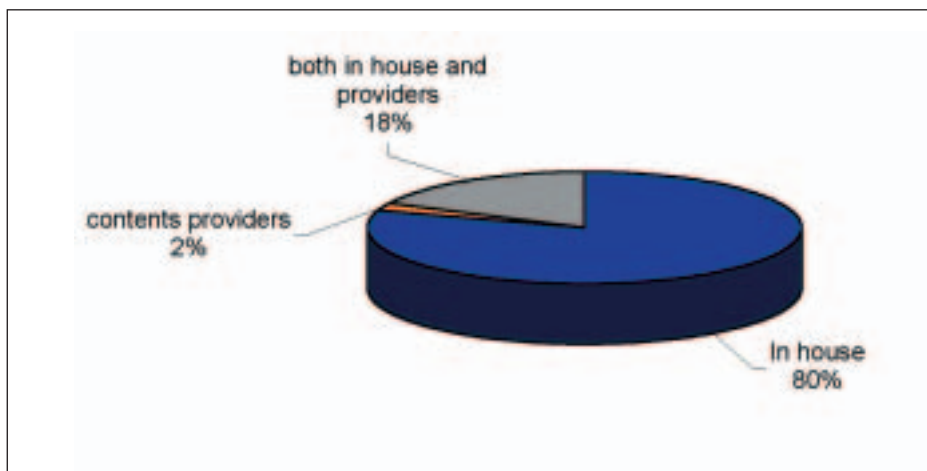
GRAPH 24. The ICT tools adopted by the courses

(Percentage of surveyed courses)



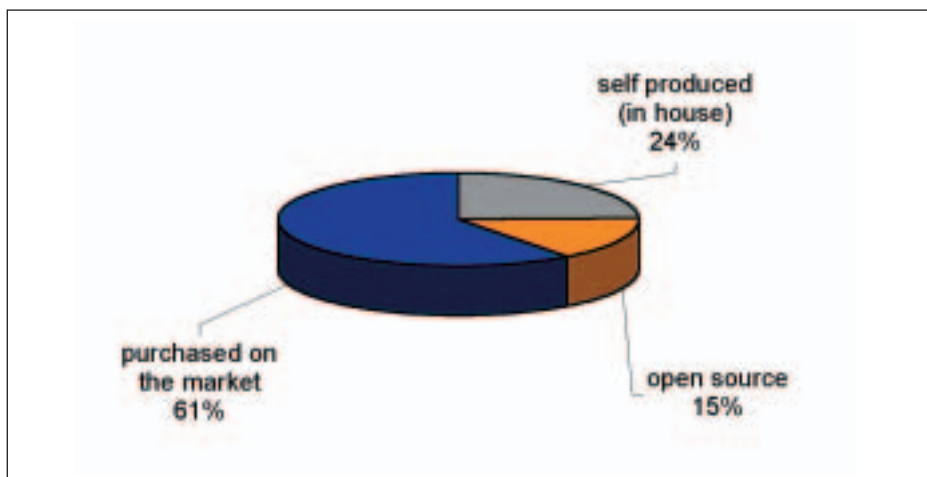
Graph 24 demonstrates how the introduction of modalities of web enhancing for teaching activities takes place first of all through the provision of teaching materials that can be accessed on-line. Graph 25 provides information here on the source of these teaching resources, which to a very great extent are the result of preparatory activity engaged in exclusively within the individual university. Only two courses in every hundred, as regards the provision of study material that can be accessed through Internet, have an opening to contents providers within the market. It should also be pointed out that 18% of the courses examined both used their own internal resources and also purchased contents from outside.

GRAPH 25. The production of the contents for on line teaching
(Percentage of surveyed courses)



Shifting the focus of the analysis from the teaching contents to the platforms, a picture of a different character emerges, given that it is above all the market solutions that populate the field of this software in the university world. However, the internal creation of these instruments was found in a quarter of the courses surveyed and flanked a further 15% of courses which, although they did not exclusively use their own expertise to produce an on-line platform, nonetheless opted for open-source solutions.

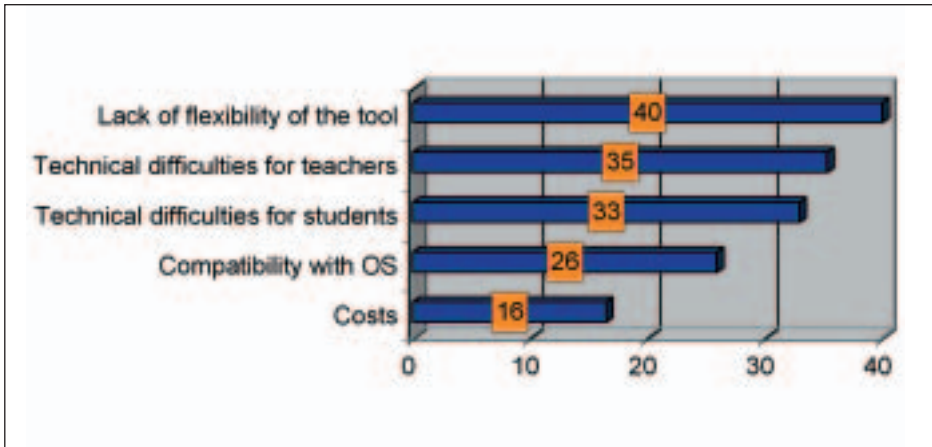
GRAPH 26. The adoption of platform for on line activities
(Percentage of surveyed courses)



With reference to the adoption of a platform for on-line teaching, the various referents of the courses that compiled the questionnaire indicated certain difficulties that had been encountered in the use of these instruments. It is interesting to observe how the various problems connected with the use of a platform, indicated in graph 8, were thought to be significant by a percentage of courses that was constantly lower than a half of those using such an instrument. Having said this, one can notice how at the two opposed poles of this list figure the rigidity of the software utilised, indicated as the most frequently encountered problem, and, on the other side, the expenditure required to purchase a platform, which, instead, was a problem perceived by a marginal quota of courses.

GRAPH 27. The main weaknesses of the LMS used

(Percentage of surveyed courses)

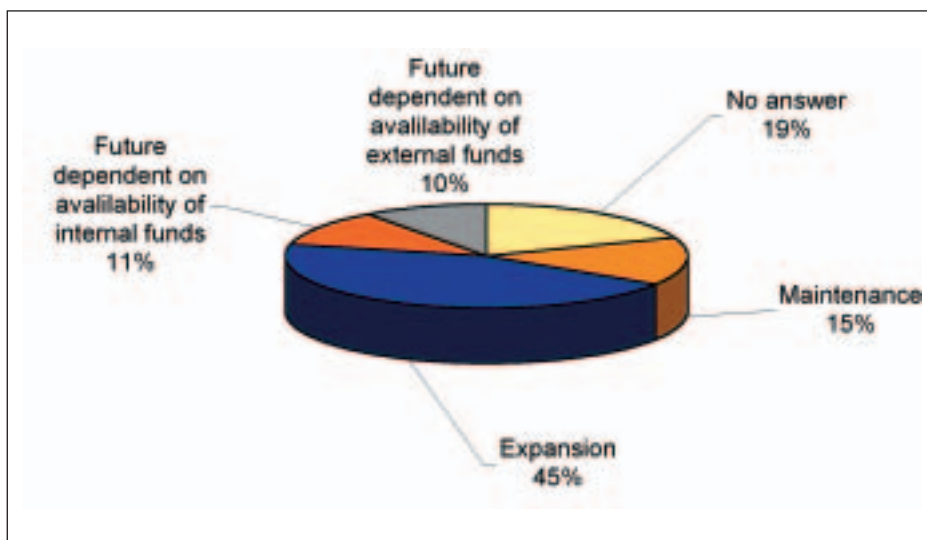


The Future Prospects for Courses

The survey, in addition to providing the above-mentioned descriptive aspects of the courses of study that employ ICT for teaching purposes, asked the various referents that were contacted to express their views on the future prospects for the on-line teaching supply of their respective courses. In analysing the various options at the levels of answers indicated by the questionnaire (graph 28), one observes that for almost a half of the experiences surveyed it is expected that there will be a strengthening of the on-line supply, whereas in the case of a further 27% of the cases surveyed it is envisaged that the present intensity of the use of the Internet for teaching purposes will be maintained. In 25% of the courses examined, those contacted pointed out the impossibility of making predictions about the

future development of on-line teaching which, indeed, will be connected to the future availability of internal or external funds to be obtained for these specific activities.

GRAPH 28. The future foreseen for the on-line part of the courses
(Percentage of surveyed courses)



Conclusions

The experience of the survey described in these pages has brought out certain elements that help us to understand in a more effective way how Italian universities relate to the phenomenon of e-learning and more in general to the use of new information and communications technology for teaching purposes.

In the presence of a series of aspects that help to increase levels of knowledge in relation to this subject, certain limitations encountered by this initiative have, nonetheless, also been registered. They, too, however, constitute signals from which, indirectly, it is possible draw certain elements that can be useful at the level of information.

Basic information that does emerge with especial visibility from the data that was collected relates to the increasing attention that Italian universities over recent years have paid to the questions and issues connected with e-learning. With the early years of this century, in particular, there has been an increasing awareness on the part of the Italian university world of the

opportunities provided by the world of information and communications technology for teaching from which, indeed, only a minority of universities appear to have been excluded.

The principal reasons lying behind the movement of universities towards the frontier of e-learning are not, however, primarily to be located in the possibility of creating a supply of teaching that is totally on-line and can be accessed from a distance. In universities the use of the Web and of modern digital technologies appears to derive first and foremost from an attempt to achieve a qualitative improvement in teaching and to secure increased flexibility in the ways the supply of teaching is accessed.

In this scenario there has been a growth in opportunities as regards training and sensitisation at the level of lecturers as regards the use of these new technologies and at the same time on-line services for students have also been increasing in number. Whereas students appear to be strongly enthusiastic about the entrance of Internet into learning practices, lecturers, in contrary fashion, demonstrate greater reservations and concerns about the progressive process of the introduction of these new technologies into teaching activities.

This scepticism on the part of lecturers is not only the consequence of a lack of cultural acceptance of the new modes of teaching that have accompanied the irruption of these technologies within universities. The forms of resistance demonstrated by some lecturers is nourished, in fact, also by the significant increase in work burdens that forms of on-line teaching involve. Such hostility also derives from the absence of a system that confers specific recognition from a legal point of view on the work carried out in activities involving e-learning and from the questions and issues, which still require to be settled, that are connected with the subject of the copyright of on-line teaching materials.

Faced with the challenge of innovation, universities are, however, ready at a technological level. The weak part of the relationship between universities and e-learning does not lie, in fact, on the front of infrastructures, where, indeed, universities by now appear to be well equipped. From an organisational point of view, on the other hand, the first encouraging signals of recent years, which bear witness to an initial attempt to co-ordinate the individual experiences that have been set in motion, should be strongly helped and encouraged.

An important objective is to look for synergies that will give greater overall cohesion to a process which, to a very great extent, has been generated

hitherto by forms of a bottom-up character and which, because they are detached from a centralised approach, run the risk of being dispersive and lacking in that necessary support which can assure that they are appreciated and will be continued with.

In this sense, an element of added value that can be attributed to the ELUE project may be identified in its having given rise to a first example of the sharing of e-learning experiences at the level of the Italian university world. Now, shortly after the termination of this survey, in fact, the various leading figures involved in this experience who in their own universities deal with matters connected with e-learning, have an opportunity to activate co-ordinates initiatives through a network that was inaugurated as a result of a survey promoted by the CRUI.

Conclusions

Project scenario

Leaving aside the area of interest that is examined, the necessary requisite for the establishment of effective strategies for action in relation to a subject lies in a preliminary observation of what already exists.

With specific reference to the phenomenon of e-learning, it was beginning with this belief that the European Commission wanted to foster the setting in motion of initiatives involving surveys and the creation of observatories on the use of ICT for teaching purposes in the countries that belong to the European Union.

The ELUE project is based specifically upon this need and seeks to offer a set of elements at the level of information that will contribute to an increase in the level of knowledge about the phenomenon of e-learning in the university world.

The criteria with which the initiative was conceived made the project especially ambitious both because the intention was to compare and contrast university systems that are profoundly different at the level of size and modes of functioning and because it adopted a survey methodology (which is rarely used in this field specifically because of the work that it requires and the difficulties that it involves) based upon the provision of a questionnaire to all the universities of the universe of reference and not to a portion of them obtained through sampling or the selection of individual case studies.

This approach bestowed an undoubted added value on the project in terms of the breadth of the realities that were investigated and the innovative character of the results that were obtained given the scarcity of previous initiatives based upon an approach of this kind. At the same time, however, the special features of the methodology that was adopted made the initiative particularly demanding at the level of the employment of human resources

and also made it particularly exposed to the risks of a non-optimal completion of the collection of information given that in the three countries that took part in the survey almost two hundred institutions overall were the subjects of the survey.

The markedly quantitative approach of the survey met the original goals of the project, which were to produce information on the scale of the phenomenon of e-learning in the world of higher education. This option, however, led to a partial forgoing of explorations of a qualitative character which, during the stage that involved the analysis of the results, showed themselves as being fundamental in a correct interpretation of the information that had been collected. Because of this thesis, the partners involved in the project perceive in the strengthening of the qualitative aspects of the survey an element of primary importance in planning a new version of activity directed towards the monitoring of university e-learning as promoted by the ELUE project. Indeed, a continuation of experiences involving a survey of the state of progress of e-learning appears to be a goal that should be pursued with commitment, in the light of the results of this project as well.

Indeed, university e-learning appears to be a phenomenon that is undergoing strong growth and one which in recent years has secured increasing attention from the actors of the European systems of higher education. However, the full establishment of new technologies in the sphere of teaching is countered by forms of resistance of a cultural character on the part of a conspicuous number of lecturers who, not infrequently, put up a certain closure in opposition to the process of integration between traditional teaching and new technologies. This is an obstacle which in the countries that were examined by the survey is not attenuated by the national laws and regulations of reference which, in fact, underestimate, or do not attribute to the lecturers and tutors who are involved in e-learning activity, a due recognition linked to the specific character of their role. The process of the spread of new teaching technologies that draw upon the use of ICT is becoming established in large measure through bottom-up processes that create within universities a plurality of experiences that often spring from the innovative impetus of individual lecturers.

However, amongst the various new departures revealed by the project figure the attempts set in motion by universities to place within a single frame the individual experiences that have flourished in recent years and to promote a shared approach that gives an overall character at the level of action to the initiatives that arise in relation to these areas. In general,

universities have the technological requisites that are needed to develop e-learning experiences but they appear to be more behindhand in equipping themselves with suitable organisational systems for the encouragement of a take-off in these activities. It is useful to observe that the implementation of initiatives such as that promoted by the ELUE project has amongst its results – in addition to the gathering of information intended to provide evidence on the current status of the phenomenon – also that of the ability to bring about a process of self-observation by the universities themselves, which are called to ask themselves about their own action in relation to the subject, thereby increasing their own perception of an activity that is still being defined and established in most of the contexts that were examined by the survey.

The need to share the experiences that have been developed is in all probability one of the principal challenges that e-learning raises for the university system, as well as being one of the most fruitful pathways by which to appreciate what individual universities have achieved so far. If in the years to come national and European Union policies give the right impetus to this trend, e-learning will be able to play a primary role also in relation to the path that the member countries of the European union have taken towards the creation of a European Higher Education Area.

Key results at a glance

E-learning is progressively becoming established as a strategic area in the world of institutions of higher learning. Among the results produced by the survey some elements appear to be especially suited to confirming the validity of this thesis. First of all, we may register a notable diffusion of a university policy in favour of e-learning within universities. This, indeed, was to be observed in most Italian and French universities and in Finland was shown to be a common feature of the entire university system. In addition, one may observe a rapidly growing trend in the adoption of this approach by universities, which have been the protagonists in recent years of a significant dynamism which was revealed by the survey through a temporal observation of the phenomenon.

The survey also brought out the reasons behind such interest by providing a picture of the objectives that the universities seek to pursue in introducing on-line teaching into their own teaching supply. A substantial unanimity between the three countries that were subjected to comparison emerged: in large measure universities choose to engage in e-learning to increase the quality of the study activities of their users and to increase the flexibility by

which it is accessed. A further objective of significant importance, although of less weight than the two that have just been mentioned, is to be found in the possibility of facilitating the access to university education by people who work and cannot attend lectures.

From an organisational point of view, the growing importance of e-learning in the university field is also demonstrated by the widespread presence of organisational units within universities which are responsible for a series of functions connected with the development of, and support for, e-learning activities. A detailed analysis of the tasks carried out by these units, however, demonstrates that whereas, on the one hand, universities are well equipped on the technological front, on the other hand there are margins for improvement which are still very broad on the front of the specific pedagogic support that e-learning requires. It should be noted that this imbalance between the two areas of the activities of these centres subjected to examination is more attenuated in the case of Finland where the university centres for e-learning work for the most part within the entire gamut of support activities for on-line teaching. In French and Italian universities this is less evident given that activities involving technical assistance rather than activities connected with teaching are prevalent.

Another aspect of the survey was the examination of the various factors that act as obstacles to the spread of e-learning within the university world. The elements that seem to more influential than others as regards the process of integrating these technologies into the teaching activity engaged in within universities are in many cases attributable to questions connected with human resources. On the one hand, there is a widespread absence of a cultural acceptance on the part of the teaching staff to new teaching methodologies that adopt multi media instruments. On the other, there is a substantial shortage of professional skills available to universities with which to plan, implement and provide teaching in an adequate way in e-learning form.

The promotion of e-learning in the university world appears, therefore, to have amongst its requirements that of encouraging the involvement of teachers, an objective that universities pursue in the main by establishing specific services for lecturers in the area of ICT.

An important primary fact is to be found in the observation that, in fact, all the universities that took part in the survey are able to help lecturers and students in solving the technical problems connected with matters relating to information and communications technology.

However, if we move forward to analysing how many universities have established initiatives involving the training of lecturers in the use of ICT, it emerges that only in Finland have all the universities that took part in the survey activated initiatives of this kind. In France and in Italy the presence of experiences involving training directed towards lecturers learning about new information and communications technologies was an element that was detected in about 70% of the universities that filled in the questionnaire.

In addition, it is not unusual for a university to make available to lecturers the opportunity of purchasing a computer at a discounted cost. This is a possibility that is widely practiced in Finland, but in France and Italy it affects a little more than a half of the institutions that took part in the survey.

The possibility of having an e-mail address provided by the individual university to which lecturers or students belong appears, instead, to be a goal that has been widely achieved by the university systems that were subjected to examination for both their lecturers and their students. With respect to students, however, Italy is in part an exception given that the process of making available an e-mail address is a process that is still underway in a narrow group of universities that have still not yet provided this service to their enrolled students.

Self-assessment of the adopted approach

The goal of the project was certainly ambitious, as was the idea of carrying out a joint survey in three countries through the use of a single on-line questionnaire for contexts marked by different levels of development in relation to e-learning in their university worlds. This was immediately evident in the drawing up of a single questionnaire to be used in the survey.

The special characteristics of the different systems required a mediation on the contents of the questionnaire which often made an understanding of certain questions at a national level difficult and which made the questionnaire excessively long and arduous to fill in. In addition, after choosing English (the foreign language for each partner) as the operational language, problems of dual translation arose which in some cases led to a 'collapse' of certain items. Unfortunately, the operation involving the creation of a shared questionnaire was more arduous than had been envisaged and did not leave enough time for the organisation of an accurate pre-test that would have brought out such aspects and led to further changes. The attempt to unify the contents in order to create a joint questionnaire that would have facilitated the comparison stage thus had certain undesired effects which

were the subject of a shared reflection by the work groups of the three countries involved and which will be of use in the possible continuation of these activities.

Overall, the survey involved 109 universities: 40 in France, equivalent to a coverage of 47%; 11 in Finland, equivalent to a coverage of 55%; and 58 in Italy, equivalent to a coverage of 75%.

The level of coverage seems to be more than satisfactory if one takes into account the subject of the inquiry and the numbers of replies that have been achieved in similar surveys¹. The level of response could be also influenced by the on-line method which, indeed, created problems at the level of compilation that were connected with the management of the server of the data depository. An on-line questionnaire should be simple, easy to fill in, and where there are difficulties swift help should be made available. In this survey, the local co-ordinator had to refer to the Italian co-ordinator who in turn had to refer to the information and communications service that had created the software, and this notably increased the times needed for the replies and for the solutions that were provided to the participants. In the light of this experience, the French work team envisages for the future the need to carry out investigative surveys which always employ different servers for the respective national databases.

The co-ordinator at a national level was provided by the CRUI for the Italian universities and the French universities and by the Finnish Virtual University for the Finnish universities. The obligation to reply to information gathering surveys does not exist in the case of any structure of national co-ordination and thus the level of adherence was due to the spontaneous participation of universities and to the strong action of involvement that the national co-ordinators were able to promote in their different contexts.

All the partners drew attention to the difficulties that were encountered in finding a person who was able to provide answers relating to the different areas covered by the questionnaire. The level of detail of some of the information that was requested in relation to the individual initiatives that had been engaged in existed side by side with a vision of the whole of the reality of an individual university, and these, most of the time, could not be obtained

¹ In the OECD survey 'E-learning in Tertiary Education' of 2005 on university e-learning, in which not one country that took part in the ELUE project participated, the following levels of reply were recorded: Canada: no questionnaires sent back; United Kingdom (43%); Australia (58%); South Africa (50%); Asia-Pacific (56%); Low income/low-middle income countries (30%).

from a single figure. This also made necessary an internal co-ordination that certainly 'discouraged' some universities from taking part in the initiative.

The universities that adhered to the initiative are not, therefore, a statistically representative sample, and thus the results, when they are extended to an entire national context, need an extended knowledge of that national context which is able to overcome the limitations of inference from data that do not constitute samples. A university that does not answer is not a university that does not have e-learning activity and if there are no rigorous procedures for the replacement of missing universities, results are derived from universities that wanted to take part in the survey and not from universities in which these matters and subjects are addressed. Thus each country made available two researchers to analyse the data of the survey and where possible to supplement them with interpretations of the context in order to provide a picture of the current status of e-learning in their national contexts.

The work group hopes for a continuation of the activities of the survey in the different national contexts, outside this project as well, in order to keep the observatory active. By next autumn, that is to say in the year 2006, the second survey could be set in motion with a notably simplified questionnaire made up of a minimum set of those questions that met with high levels of response in the different national contexts but expanded with specific national questions that inevitably depart from the activity of comparison. The results of the survey are certainly an excellent test which can be used to engage in a screening of the various items on the proposed questionnaire.

If further finance arrives so that this activity can be continued it will be necessary:

- 1 to revise the questionnaire in the light of the results of the survey so as to simply its contents and make its compilation easier; this would also have a positive effect on the usability of an on-line questionnaire;
- 2 to achieve a better definition of the target of the survey, with a preference for the strategic vision of individual universities rather than the details of various different initiatives which, indeed, are too specific to be compared;
- 3 to broaden the techniques of the survey so as to include elements for the analysis of qualitative aspects;
- 4 to increase the number of 'frontal' meetings with the partners so as to make discussions more rapid than is the case with communication via e-mail.

Exploitation of results and follow-up

The statistical information and indicators illustrated in this volume, although they constitute the response to the goals aimed at by the project, are not the only results that have been obtained through the activities that have been engaged in.

Side by side with the various elements at the level of knowledge obtained during the stage of the collection and analysis of the data, there emerged during the course of this experience various aspects of equal value at the level of information which go beyond the request for information presented to the universities through the sending out of a questionnaire.

The reference here is to information on the phenomenon under examination that the institutions involved in the project obtained from their experience of managing, monitoring and redirecting the organisational processes of the project, from their relations with other universities, from the forms of communication adopted by the various actors involved, and from the many technical and organisational needs that emerged during the project.

Taken overall, these elements make up a useful legacy both in order to interpret the data collected in a more effective way – given that they constitute a basis of additional and complementary information as regards the results of the questionnaire – and in order to plan a new survey with greater knowledge and awareness in the light of the lessons that have been learnt.

Some of the observations obtained at the end of this experience are closely bound up with the organisational

models that direct the activities of university systems which, in the relations between universities and in operational forms within individual institutions, are based in a strong way upon a principle of autonomy that takes shape within a more or less structured co-ordination of the various processes. As regards the field of e-learning, the features mentioned above of this approach are seen within a dynamism that takes the forms of bottom-up processes in which the innovative impulses usually arise in an episodic way and, where they are able to become established and obtain valid recognition, become propagated beyond their original boundaries and penetrate in a more extended way the general organisational context to which they belong. Within the framework of the goals of the survey carried out within the context of the ELUE project, a situation of this kind made especially difficult operations designed to explore the phenomenon because, although a person officially entrusted with the compilation of the questionnaire was identified

for each university, this figure did not always have available a complete framework of information on all the activities of e-learning carried out within his or her university. In the light of this observation, there emerges the advisability of concentrating the requests for information on a more circumscribed number of questions. This would make possible the obtaining of data attributable to the whole of the university so as to assure a more effective processes of investigation and a greater comparability of the information gathered. A valid alternative to this option may be identified in the identification of a greater number of respondents in each university or in the introduction amongst the aspects explored by the questionnaire of elements of a qualitative character to flank the data and support their interpretation in a more precise way.

