

## The Virtual Campus of the University of Liège, Belgium

by

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### Introduction

At the University of Liège, *L'Institut de Formation et de Recherche en Enseignement Supérieur* (IFRES) (The Institute for Training and Research in Higher Education Teaching) is in charge of the university's Virtual Campus. The internal operator of the Virtual Campus is the *Laboratoire de Soutien à l'Enseignement Télématique*, the LabSET (Laboratory for the Support of Telemathic Teaching), which coordinates the university's provision of online education and also the support to teaching staff, not only for increasing the quantity of this online provision but also, and more importantly, for improving its quality.

The teaching staff access their online courses via a portal named eAgora (<http://www.elearning.ulg.ac.be>) which provides them with guidance, educational tools, and a series of services linked to the teaching community (discussions, FAQs, news, demonstrations...). The students, on the other hand, access their online courses via another portal, reserved to students and called MyULg (<https://my.ulg.ac.be>).



Figure 1. <http://www.elearning.ulg.ac.be>

There are 178 courses on the Virtual Campus of the University of Liège. As this number is in constant evolution it is important to state that this is the total at 1 March

2007. One should note as well that this only represents the courses developed on the WebCT platform, and thus does not represent the full offering of the University of Liège because certain staff members choose to use their own tools. In this case they do not benefit from institutional support in the development of their courses. Of the 15.000 students at the university, 18% could be said to be distance education students, defined as students who do at least 50.1% of their programme online. It is to be noted that most of our students pass some of their time working online, even if they continue to come on-campus. The 18% of distance education students are usually in their first year and have more than half of their course composed of a large amount of online content and activities.

## **Historical context**

What came to be known as elearning at the University of Liège was born from the *Service de Technologie de l'Education* (STE) (The Educational Technology Service) directed by Professor Dieudonné Leclercq. In 1998 a small group of 4 people was started, whose objective was to study the existing tools and services, to evaluate the importance of the emerging market and the added value that elearning might bring to the university.

This group separated from the STE and from its faculty in 2000 to become an entity in its own right, with its own management and financial autonomy. At that time it had 10 staff members and was called LabSET (Laboratory for the Support of Telemathic Teaching). In this title the word 'laboratory' emphasises its basis in research and the word 'support' shows an engagement to work alongside teaching staff.

Seven years later LabSET has 34 staff working both on internal projects (for the benefit of the university and financed by it) and on external projects. External projects represent 75% of the activity of the centre and 75% of its financing. There are local projects, European projects and international projects and with all kinds of partners but always focusing on the development of concepts and tools for quality in elearning.

Parallel with this evolution, the university grouped together all the entities which focused on the quality of teaching and pedagogical innovation. In 2006 it created IFRES (The Institute for Training and Research in Teaching in Higher Education) and naturally included LabSET within it. This restructuring of support services for teaching strengthened the institutional visibility of each one of these services and gave them a new confidence in their capacity to contribute to the quality of teaching and thus to student success.

### *A developing competence*

Competence in elearning at the University of Liège developed in three ways. Firstly, the lecturers introduced innovations on a voluntary and individual basis, making use of the elearning tools and adapting their courses to the new possibilities. Secondly, LabSET developed and, thanks to external funding, became a competent adviser on large and small scale initiatives. Thirdly, the university adopted an elearning platform and placed it in the *Service General d'Informatique* (SeGI) (Central Computing Service), permitting the teaching staff to concentrate on the pedagogy, and to trust the robustness of the technical solution. In this way many areas of competence reinforced each other and thus defined growing areas of expertise.

For LabSET, projects external to the university were an important factor in the development of expertise. The experience of being confronted by multiple realities

and the development of large scale solutions for very different publics produced a refocusing, a change of optic and a degree of reflection which benefited all these publics. These target groups reached from the demand for employment which went beyond university qualification and reached all types of target groups in professional training. In this way, for example, the coordination of the ICT training of 20.000 employment seekers per year, the animation of large communities of practice for trainers, or again the annual development of online courses for dozens of trainers in all disciplines, allowed the LabSET team to develop competences, models of action, learning content and learning tools usable afterwards in their own institution. On the other hand, the availability of hundreds of students in a wide range of disciplines made possible reflection on research questions which would be difficult to address without a 'captive' public. Thus, internal and external projects contributed in a spiral fashion to improving and continually developing the competence of this support team.

It is also important to note over time the creation of varied training solutions both for the teaching staff and for the 'development mentors' of LabSET, both online and face-to-face, both internally and externally (conferences), together with reflection circles and other methods of accompanying pedagogical innovation, accompanied by developing internal evaluations. All these solutions contributed, each in its own way, to a constant improvement of competence of those in charge of elearning.

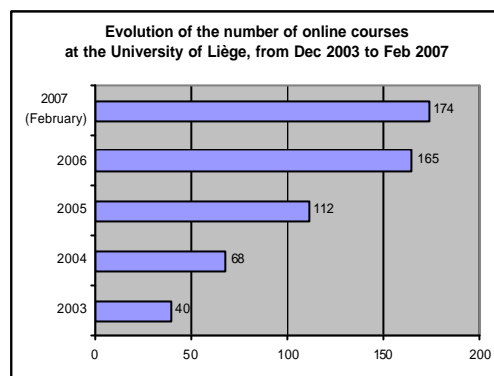
One such initiative that may be mentioned is the creation of the Masters Degree in the Pedagogy of Higher Education (*Formasup*) (60 credits) and its elearning option, which enrolls 20 staff participants annually. This initiative contributes, on a small scale but with great depth, to improving the competence of organisers of elearning within higher education institutions. These staff members then become advocates of elearning solutions, participating in the dissemination of practices which reinforce the quality of student learning.



Figure 2. Master Complémentaire en Pédagogie de l'Enseignement Supérieur (Formasup)

### Rapid evolution

We consider that the development of elearning in our institution was rather rapid, because this type of activity, almost unknown 10 years ago, is today an activity of each student at the university. Clearly one can identify different plateaux in this evolution, elements which have rapidly and significantly modified the volume of courses developed, like the adoption of an institutional platform or the development of a unique identification for each student and for each staff member, thus bringing together the administrative and pedagogical computer systems of the university.



**Figure 3. Evolution of the number of online courses.**

In the illustration, we present the evolution of the number of online courses between 2003 and 2007, bearing in mind that the year 2007 has already seen the creation of 9 new courses in the month of January alone.

### **Research. A valuable tool at the service of the Virtual Campus**

Since its creation in the year 2000 LabSET has always combined service activities with projects oriented to research or teaching. More recently the theme of 'Scholarship of Teaching and Learning' has accentuated our determination to link closely teaching and research, thus transforming the teaching staff into researchers, both practitioners and real partners of educational research. Evaluation, naturally, has its pace in this structure where every pedagogical action is associated with research on proofs of its efficacy, of its balance and of its effects on student motivation or on any other factor judged pertinent by the teachers in their own context.

'Class research' forms part of the practice evaluated, notably by the Masters Degree in Higher Education, known as 'Formasup'. A special number of the *International Journal of Technologies in University Pedagogy* (RITPU), presents 7 articles which illustrate the concern to produce observable data, to analyse the impact of an elearning course and to always go further and further in 'class research'. Poumay (2007) introduces these articles by a presentation of the structure of Formasup, within which this research work has been produced by teaching staff from many institutions.

This orientation of research linked to teaching contributes to the recognition of the IFRES (The Institute for Training and Research in Higher Education Teaching) and of the LabSET centre by the staff of all the university's faculties. In fact, in a university context where research is the key to all internal promotion, to consider teaching as a totally valid field of research, can only contribute to its value in the eyes of university staff and this contributes to a change of status within the university. The effects of this change, in Belgium for instance, have resulted in the creation in 2006 of a new community commission charged with financing research into university pedagogy. The credits awarded to the university by this commission contribute to the establishment of university pedagogy as a new research discipline and, as a consequence, give added value to activities of research in elearning.

Within LabSET, the research produced by elearning activities goes well beyond the dimensions of the university. European projects facilitate the development of models and tools, which in turn contribute to the development of services offered to staff

within the university. Thus there is an important synergy between internal services and external research.

### **Technical issues**

As a public institution the University of Liège has to furnish each student with access to recent computing materials within its faculties. For those who possess their own computer, no payment for software installation is necessary. The teachers generally give lists of plug-ins free of charge, in order to enrich the learning content and the activities proposed by the learning platform provided by the university. The costs of the platform are not borne by the students.

#### *The technical competences of staff are no longer an obstacle*

At the University of Liège the use of standard ICT equipment no longer poses problems for anyone. The staff (teachers, assistants, people in charge of practical work or other 'mentors') all use the internet, have an email address (provided by the university) and are competent in the use of the basic administrative computing tools. The students are familiar with the technologies and possess their own equipment which is becoming more and more widespread and powerful. In some faculties (Applied Sciences, Economics and Management) about 90% of students have a personal computer (either a desktop or laptop) connected to the internet. In other faculties they are less well equipped but have access to university computing laboratories.

On the other hand, the teaching staff have diverse competences when it comes to mastery of the elearning platform, or of tools for developing html pages or videoconferencing. LabSET, therefore, works on the mastery of these types of technological competences by assisting staff who want to progress in these areas. The emphasis is always put on the pedagogy; technological mastery is only introduced from the point of view of practical realisations. It is important to note also that the teaching staff work generally in a team with an assistant, a representative of UDI (a decentralised computing unit) and a colleague. In each department for 2008 it is envisaged that there will be installations for 'Pedagogical Initiatives Posts' in order to facilitate local mastery of advanced technological tools, always for use in a pedagogical project.

#### *A necessary integration of pedagogical and computing systems*

The University of Liège has chosen a single elearning solution for all its teaching staff. The existence of this single system has facilitated dialogue between the administrative databases (student lists, staff lists, course lists) and the pedagogical tools (elearning platform, student portal, staff portal). Today this integration is complete with each user have a unique log-in to all the services he or she needs. In 2006, however, our university amalgamated with a Business College which up to that time existed separately and had its own elearning system. The integration of this Business College is administratively complete but two elearning platforms remain and it is difficult to imagine us providing this double service to the teaching staff. The intention is to continue with one, the more efficient one, in order to reduce the costs of support to staff and students while maintaining quality of service.

#### *Strengths....and weaknesses*

One of the strengths of our system is undoubtedly the integration of administrative and pedagogical data. Freed from routine tasks and tedious administrative tasks, our

support services to the teachers can focus on the quality of the online courses and on the constant search for solutions to the pedagogical problems. The richness of online learning can be seen as a strength which flows from what is gone before with a range of actions in rapid and constant development.

One can regret that our elearning system has not yet achieved full online certification even though this is a subject of discussion within the university. The students' grades still pass by the secretaries of the faculties because nothing can at present be written to the administrative databases for reasons of computer security. Technological evolution will quickly solve this present weakness.

### **Online courses**

At the University of Liège elearning addresses all disciplines equally. Within faculties and departments it is the individual wish of the faculty member that decides on online development and not the nature of the discipline. As an illustration, we have 49 online courses in the faculty of psychology and educational sciences, 14 in Applied Sciences and 28 in medicine. The staff members who embrace elearning, whatever their discipline, generally extend their elearning offerings to many of their courses.



**Figure 4. Online courses at the University of Liège**

One can group online courses independently of their subject matter but one cannot do the same with the methods used in online learning. In fact, the learning scenarios put in place by teachers are, in part, the results of pedagogical currents found in their faculty or department. So, for example, the online courses of the Faculty of Medicine are based on problem based learning (PBL) and those of the Faculty of Applied Sciences use the principle of 'pedagogical half-time'. The teaching staff, more and more and independently of the subject matter in question, choose to group themselves together to design common online courseware, either addressing a grouping of course materials in order to identify the competences which a student ought to be able to demonstrate as a result of the course, or conceiving transversal applications in many different course materials on the same subject. The content of a course in any case never constitutes a block to its online development.

#### *Flexible complements to conventional courses as an aid to success*

The majority of our online courses are supports for student success. They are course supporting materials (essentially printed materials and Powerpoint presentations) but there are also animations, formative evaluations, self-correction exercises or

explanatory videos. Some of these materials contain learning activities, either individual or group-based, which replace face-to-face courses or modify their presentation but the majority of them are complementary to conventional courses. The materials have great flexibility and allow all students to work on their individual difficulties. Precise diagnostic tests often allow students to identify their position with regard to competence mastery and learning objectives, and then to address the lacunae identified by means of specific activities.

### *Predominantly asynchronous technologies*

Few of the online courses do not have a discussion forum for asynchronous communication. On the other hand, synchronous communication is generally reserved for short, usually organisational, interventions, as, for example, the composition of project groups and their choice of study theme, or else a brief session to verify if instructions have been understood. An exception to this essentially asynchronous functioning is the case of international courses. These courses, of necessity, need regular contacts by videoconferencing to facilitate the constitution of learning groups and synchronous communication between students in different countries is necessary. Even if this type of course today represents only a minimal proportion of our Virtual Campus (less than 10%), we have strong reasons to believe that their numbers will increase in the years to come.

As for communication between students, it is sometimes necessary during learning activities, in collaborative or group activities, in which case forums are allocated to it, but it is also always a recommendation to teachers to plan a free forum (sometimes called 'a café') which allows students to communicate freely amongst themselves. Non supervised 'chat forums' are often added to those that the teacher supervises for interaction analysis.

### **Institutional strategy**

Institutional confidence is one of the keys to success of a Virtual Campus. The great confidence which our university authorities accorded to the developing elearning initiative allowed flexible solutions to be put in place. These were always adapted to student needs. This creativity would not have been possible with a rigid administration. The administration then supported the choice of a central technical platform (WebCT) which brought considerable saving of time. The elearning team focused on the methods for getting the maximum power from this solution and did not have to consider already-developed solutions in individual departments.

In fact, in the year 2000 the university departments did not have their own solutions so that we were able to set out into territory that was clearly pedagogically rich but which was virgin territory technically with regard to an integrated elearning system.

At the beginning, the only thing that was necessary for our first experiments was financial support. Then institutional support was crucial for the status of elearning. Today it is the evaluation of elearning initiatives that is the central question, because the majority of the university staff are convinced about the importance of elearning but they have difficulty in making the necessary time available for an innovation that has less status than university research. The most recent decisions taken by the university, the creation of the IFRES institute (The Institute for Training and Research in Higher Education Teaching) and the budgets allocated to it, establish obligatory pedagogical training for each new staff member from 2007 onwards, and also the evaluation of pedagogical initiatives as a criterion for career advancement. Both these measures send out a positive signal to staff. We can already see the results.

### *Teaching staff at the centre of evolution*

The teaching staff, when they are well informed, are quite favourable to accompanying their courses with online elements, and then, quietly, to replacing face-to-face activities by online activities and even sometimes to replacing their face-to-face courses by courses entirely online. If one can notice today the multiplication of online courses, this is because the teaching staff are themselves promoters to their colleagues not only of general information about elearning but also by their own achievements. Elearning spreads by 'contagion' and attitudes are changing because information about the added value of elearning is today much better than it was 5 years ago. The efforts of the support centres now take the form of spreading elearning rather than persuasion about it.

### *Choices made: liberty and free provision*

The University of Liège has made the choice of respecting students' preferences. Students have total freedom to use elearning or not and, if they choose to use it, they have freedom of choice on the amount of elearning that they wish in accordance with their own objectives and constraints. In addition the university offers incentives to elearning: the financing of a support centre (LabSET) and of its Virtual Campus, both of which aid teaching staff free of charge; the organisation of a Masters Degree in the Pedagogy of Higher Education for 60 credits and its availability online, which allows staff to get a university degree and to undertake an elearning project; compulsory training for young staff members, comprising an elearning module; and soon there will be an evaluation of their pedagogical efforts, especially in elearning, in an individual portfolio which will be taken into account at the time of nominations and for advancement in their teaching career.

It is too early to measure the quantitative and qualitative success of these initiatives but it is clear that we are moving towards a higher evaluation of the teaching function, even though the university retains its research orientation. Staff have clearly understood that this university emphasis favours elearning.

The University of Liège has also made the choice to make available both face-to-face courses and online courses at the same price. The enrolment process is identical, whether the student chooses or not to access the elearning activities in his or her chosen course. In addition, the university does not distinguish the payment of teaching staff for the type of support they give to students: conventional teaching or online support or a combination of the two.

### *Online course quality: a factor in success and in the extension of the campus*

LabSet has established a list of quality criteria for elearning. This list is made up of 22 criteria and is used in the Masters Degree in the Pedagogy of Higher Education and in all documentation for staff. It is of great value for teaching staff who want benchmarks and who want their results to be as successful as possible for students because they put a great deal of energy into their online courseware development. Our list of criteria is based on justifications and is matched by bibliographical advice and by illustrations taken from existing online courses. It serves to establish our pedagogical credibility to staff but also, and above all, to the improvement of the courses developed.

Teaching staff who have developed quality courses and who have acquired a good level of critical reflection are also excellent spokespersons for the support centre and

are good ambassadors of an elearning provision centred on student learning. The multiplication of their numbers contributes to the success of elearning in the university. These professorial staff are invited to share their experience with their colleagues by presenting their online courses to seminars organised monthly by LabSET. This quality appears to us to be an excellent driver of success.

Although the existence of quality online courses is considered an asset for student success, the development of these courses is still too little recognised by the university. On a daily basis, the workload of staff who teach online courses is neither more nor less predictable than those who teach face-to-face. Those who teach large classes, with hundreds of students, generally employ online activities which are automatically corrected and do not require too much attention. Group activities or online tasks can be corrected by assistants, just as for the face-to-face classes. On the other hand, the initial conception of a course and its development provide a considerable workload for the staff member concerned and this is still insufficiently recognised today.

#### *Coordination of institutional tasks: a daily difficulty*

Putting in place a Virtual Campus requires excellent coordination between the student support services (in our case LabSET), the university computing services and the central administration, responsible for the student and staff databases. This coordination is not yet perfect at the University of Liège. Administrative delays remain as do difficulties in the decision making sequences which affect the life of students. Progress is needed in this area.

On the other hand, the computing management of the elearning platform chosen by the university (at present WebCT) is today well under control: there are back-ups, the creation of spaces for the courses and computerised student enrolment, with daily updating of the databases to take in the new enrolments and their choice of options, opening of online courses specifically for staff support, treatment of divided courses etc.

#### *International collaboration: an important scientific opportunity*

The University of Liège collaborates with many other institutions, both in research and in teaching. Collaboration contracts are signed each year; exchanges of both students and staff are organised; research projects allow teams to collaborate on important themes. In elearning we are the subject of many requests from the South to access our online content but the university has not made a global authorisation for this. Individual staff members, therefore, cooperate on an individual basis with foreign colleagues but these North/South elearning collaborations are not specifically coordinated at institutional level.

LabSET, through many of its members, is present in many international networks on university pedagogy (AIPU, ICED, EDEN, POD, HERDSA) both in Europe and overseas, which gives it a scientific opening to world advances and international research currents. This opening, plus participation in numerous conferences, contributes to the success of the Virtual Campus of the university as it is nourished by international experiences and multiple partnerships.

#### *External credibility: a driver of internal recognition*

In the field of elearning the University of Liège relies on the reputation of LabSET and the success of important projects entrusted to it by local public authorities like the

Region of Wallonia and the French Community. This external success was, in the year 2000, one of the important contributions to the university decision to finance internally the Virtual Campus and to entrust it to LabSET.

In the field of elearning, internal developments were preceded by external realisations, which are always on the increase. The extent of our projects, PMTIC (training of 20.000 job seekers per year and coordination of over 200 trainers), Formadis (putting online more than 50 development and training courses for selected elearning personnel) and eCole (online learning for students of 10 - 14 years of age in the French Community of Belgium) give the university an important visibility. It also gives LabSET a credibility which affects both its own recognition within the university and also the image of the university itself. In addition, we often use illustrations from these external projects to nourish our course content, both internal and external. Also, at the scientific level the external and internal data complete each other in our research projects, furnishing matching points of view on complex realities.



**Figure 5. External projects at LabSET**

#### *The extension of the Virtual Campus: towards a decentralisation of student support*

The Virtual Campus team is growing and so is the whole LabSET team. The equipment is more and more sophisticated, the servers and the platform are robust, the elearning team talk to each other more and more, which solves a part of our problem with the growth of our Virtual Campus.

In addition, the Pedagogical Initiative Posts will soon be established in all faculties, with the purpose of supporting the actions of the teaching staff within their departments and on passing on the central initiatives of LabSET and of other support services. Bringing together the increase of our central team plus the creation of decentralised posts ought to enable us to be able to confront whatever is the size of the development of the Virtual Campus. We are also counting on the training of the personnel either through our Masters Degree in Higher Education Pedagogy or through our more precise training offerings. This training, because of the critical reflection it develops, contributes to assisting correct decision making by the teaching staff and their organisation of quality online courses, even for large groups of students.

Today, because of institutional amalgamations, colleges are joining us that have their own technical elearning solution, their own elearning platform. This poses multiple problems and is becoming a considerable financial investment for the university. It introduces the hosting of new servers for the maintenance of a second platform, the development of courseware for a second platform and the need for new technical expertise for new teaching staff. Communication about the differences between the available tools and adapting programmes which permit dialogue between the new

tools and the existing administrative databases, are the constraints which are unfortunately linked to the arrival of a second technical solution. The university envisages either maintaining the original unique solution, or the cohabitation of the two solutions, or again migration to a third tool, which would be more flexible and more powerful, for the year 2010. The university has to make its choice in full realisation of the investment needed for multiple platforms, without forgetting that even if the tools do not determine their use, pedagogical quality can depend, to a certain extent, on the richness of the functionality inherent in the platform.

## **Economic aspects**

### *A non-commercial vision at the start*

The University of Liège has not tried to establish precisely the internal cost-effectiveness of elearning. On the one hand, it seems evident to us that the demands of the teaching staff, of students and of external evaluators should be responded to and, on the other hand, that quality elearning is without doubt a contributor to student success. The loss of not having developed elearning would be much higher than the cost of today's investments. We put the emphasis, however, on faculty assistance, on semi-collective training (groups of 6 – 12 students) and on self-training web locations, all of which reduce our efforts and save money on student support, all the while focusing on quality and on the involvement of large numbers of students.

The University of Liège does not have a truly commercial approach to elearning. Online activities are offered to face-to-face students without any increase in the cost of their course. Even courses that are available totally online are not subject to special charges: they are offered at exactly the same price as the face-to-face courses. Elearning is clearly considered as an added value for the students, as an aid to success, rather than as a new commercial niche offering. This will clearly evolve over the next 10 years to respond to the demand for lifelong learning.

### *New prospective markets*

The growth of our Virtual Campus is foreseeable, at least for the next 10 years. On the other hand, the strictly financial benefits that this can generate are difficult to establish, if only because the new market perspectives that open up to us cannot be, in general, attributed to elearning alone.

Both internal and external evaluations lead education towards flexibility and to making it achievable in situations where partnerships are more and more diversified. Inter-university competition and the prospective of institutional groupings to reach significant size at the European level are an important driver of change. The pursuit of levels of performance pushes university staff to make known the quality of their research, something they have always done, but also to make known the quality of their courses, which is a more recent development. The Virtual Campus benefits greatly from this new realisation of the importance which pedagogical quality plays in these inter-institutional comparisons.

The demand for lifelong learning is becoming more and more pressing. European organisations, the local public authorities and our partner institutions wish to see the doors of the universities open to more extensive provision of continuing education. A new market is opening up for elearning which our university will not fail to meet.

### *Reduce the costs of student support services, while remaining vigilant*

During the course of the last 10 years, the University of Liège, like the majority of its sister institutions, has seen an increase of the proportion of temporary staff in comparison with full-time staff. 'Assistants' take on more and more of the tasks of student support services and the students have less direct contact with full-time teaching staff. This situation is caused by the increase in the number of students which has not been matched by a parallel increase in public funding to the universities. The universities work in a 'closed envelope' and therefore address the increasing numbers of students by employing staff that are less costly but are in a more fragile professional situation.

In this context, it may be that the new services of online training and the finances associated with them may be susceptible to contributing to guarantee the quality of education in spite of the reduction of government subsidies to student support services. It is our responsibility to remain attentive to quality and to denounce the possible reductions, like, for example, that of reducing elearning to a tool for the massification of education to the detriment of student learning. These caricatures are false advocates of elearning. We wish rather to promote practices which give students responsibility, which develop students' reflective practices and which extend the choice of learning paths which are offered to them, while informing them in a very diagnostic way of their progress and their weaknesses.

## **Conclusion**

The Virtual Campus of the University of Liège has today 178 online courses. All the 15.000 students of the university are involved in elearning. Elearning sets out to propose to them assistance in learning and therefore assistance towards success, thanks to the online courses which complement the traditional course offering. Students respond positively to elearning, they see it as in their interests. For their part, the teaching staff train themselves and acquire competence in critical pedagogical reflection in addition to their disciplinary expertise. They develop their professionalism in teaching practice and are more and more conscious of the interest that the Virtual Campus, provided for them by their university, represents for their students.

New practices are emerging, new tendencies are appearing. For example, among the indicators of institutional performance one finds today, on the one hand, a willingness to appreciate pedagogical involvement and, on the other hand, there is investment in support for teaching staff and research on pedagogical quality. At the University of Liège elearning has, quite naturally, a place of choice.