

Higher Education Distance Learning in Portugal - State of the Art and Current Policy Issues

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Abstracts

English

The paper is based on a recent report given to the Portuguese Ministry of Science, Technology and Higher Education on "Reforming Higher Education Distance Learning in Portugal" (Hasan et. al. 2009). The report was grounded on on-site visits of leading Portuguese Universities, Polytechnics and Business Schools as well as on written statements of the institutions visited. Additional material has been provided by the Ministry of Education. The article tries to give an appraisal of the actual state of the art of university level distance education in Portugal covering issues such as spread of distance learning so far, attitudes towards distance learning, pedagogical models, access, funding and quality issues. On the basis of this analysis some policy recommendations are formulated by the authors.

German

Der vorgelegte Artikel basiert auf einem Gutachten ("Reforming Higher Education Distance Learning in Portugal" (Hasan et. al. 2009)), das für das Portugiesische Ministerium für Wissenschaft, Technologie und Höhere Bildung erstellt wurde. Die Studie basiert auf Besuchen der führenden portugiesischen Universitäten und Fachhochschulen (Polytechnika und Business Schools) sowie auf schriftlichen Stellungnahmen der betreffenden Institutionen. Zusätzliche Unterlagen wurden vom Ministerium zur Verfügung gestellt. In dem Artikel wird der aktuelle Stand des universitären Fernstudiums in Portugal beschrieben. Dabei wird die bisherige Reichweite der Anwendung von Fernstudienelementen dargestellt, ebenso wie Einstellungen und Haltungen gegenüber der Fernlehre erörtert und vorherrschende pädagogische Modelle, Zugangsbarrieren, Finanzierungsformen und Qualitätsmerkmale analysiert. Auf der Grundlage der betrachteten Problembereiche werden anschließend von den Autoren einige Politikempfehlungen formuliert.

1. International trends in Distance Learning (DL)

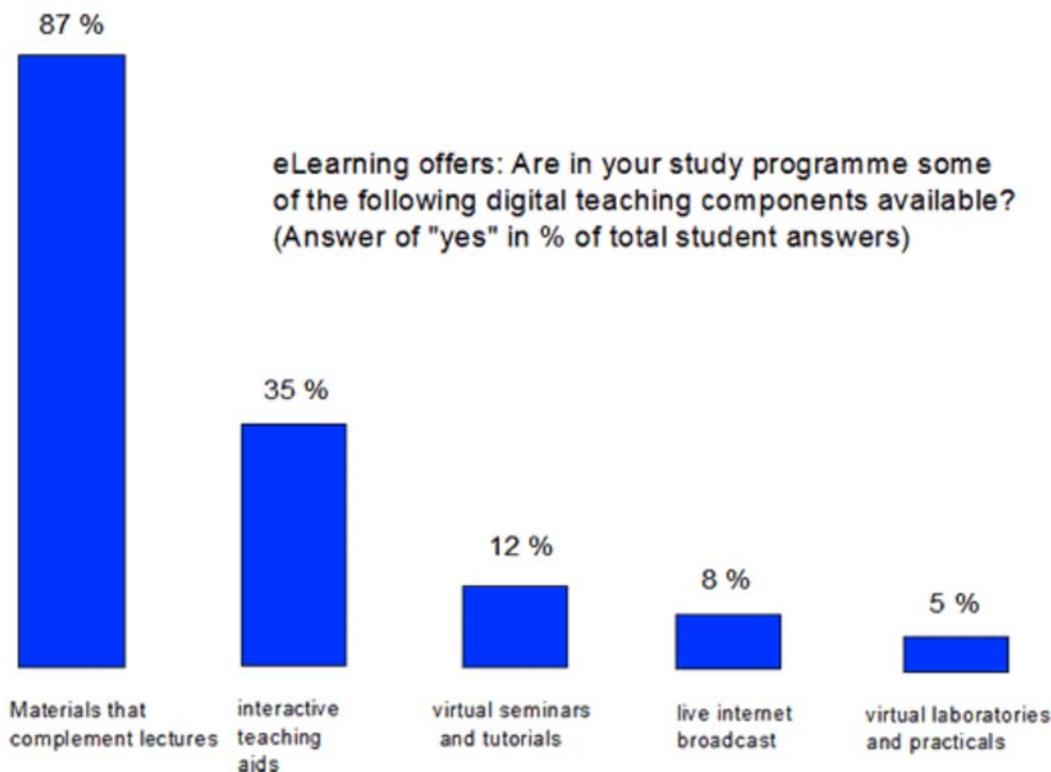
A key development to be noted is that the use of a new learning management system spread rapidly to conventional universities and started to break the monopoly of the large distance learning universities. Furthermore the traditional way of content production supplemented with some tutorial support was questioned as being the delivery of "canned content" that neglected the potential of students' collaborative contribution to enhance their learning. The development of network supported teaching environments was a tool to exploit this potential as it was accompanied by a shift from the behaviouristic and cognitive learning theories and approaches to constructivist and more collaborative oriented learning paradigms like connectivism (Siemens 2004)

These developments emerged in the form of "blended" pedagogical approaches that offered increased opportunities for simultaneous and collaborative interaction with peers as well as with faculty - forums, chat rooms, online tutoring and course content on a web site. Tutoring online replaced, at least in part, F2F tutorials in fixed locations. Highly specialised tutors can tutor students wherever the tutors are.

The growing use of blended models in traditional Higher Education Institutes (HEI) was supported by other developments on the side of student circumstances and needs. More and more students worked as much as 20 hours a week for a variety of reasons, including to pay their fees, and needed greater flexibility in class schedules to accommodate their work requirements. With the new developments students had the benefit of a choice between the two options, the blended model and the virtual.

An example of the spread of the DL pedagogy is offered by a recent survey conducted in Germany and reported in Figure 1. It shows that that 87 % of the students in Germany use digital teaching material in support of classroom lectures; 35 % used interactive teaching modules; 12% participated in virtual seminars; 8% received live internet broadcasts; and 5 % used virtual practicals and laboratory activities.

Figure 1. Students Preferences of eLearning Offers



Source: B. Kleimann et al. (2008), Studieren im Web 2.0, HISBUS Kurzbericht 21, Hannover

The foregoing brief review of international trends in distance learning provides a useful perspective for reviewing the state of distance learning in Portugal. It highlights two important trends that are worth bearing in mind. First, there is a dramatic shift in DL pedagogy towards collaborative networked learning with a shift of emphasis from the dimension of "space" in distance learning towards the dimension of "time". Second, the use of the blended models by traditional HEIs has spread rapidly and represents the wave of the future.

II. Distance learning in Portugal

II. 1 Size and diversity of provision

Traditionally, Portuguese education culture is rooted in the face-to-face model of instruction. While Portuguese HEIs have a national character, they are by tradition more configured as regional/local entities that do not emphasise coverage of several regions or the nation as a whole in their activities (for details about the structure of Tertiary Education in Portugal see OECD 2008). It is up to the students to reach out to the institution of their choice wherever it is located. The DL paradigm, on the other hand, works differently: it is for the institution to reach the student wherever they are located.

Portugal started an autonomous distance teaching university, the Universidade Aberta (UAb), in 1988. This was at least a decade late start compared to the development in the leading European countries, though arguably not later than some Southern European countries (e.g. Italy).

In recent years, contextual changes that have shaped the development of DL in Portugal include demographic changes (massive migration towards the coastal belt), growth of higher education in general; increased accessibility to HEIs through improved roads and transport networks; changes in DL pedagogy and on-site education methodologies and technologies. The growth in demand for DL has come from massive increases in access to basic education, shifting demand for skills and qualifications in the labour market and the personal development needs triggered especially by the onset of the information society.

Currently, DL in Portugal covers only a small proportion of HE enrolment, roughly less than 3 per cent. Approximately 90% of these students are enrolled with the Universidade Aberta (UAb), while small offerings come from other Universities and Polytechnics.

The UAb has a student body of approximately 10,000 students, though the number has fluctuated around this number in recent years. Its programme offering remains narrowly focused on a few disciplines and a significant proportion of its programmes, approximately 30 per cent, is directed at Portuguese speaking students in former colonies.

Figure 2. Total enrolments and enrolments by education area at University Aberta

Enrolments by education areas	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Arts and Humanities	1 736	2 039	772	684	675	2 008	2 094	1 532	1 586	1 646	1 677	1 508	1 280
Social Sciences, Commerce and Law	219	359	429	445	762	1 649	2 396	2 220	2 984	4 144	4 681	5 773	5 786
Sciences, Mathematic and Information Technologies	-	-	-	-	89	211	448	282	439	521	568	570	747
Education	-	-	-	12	1 424	2 280	3 036	2 287	2 632	2 848	1 445	952	789
Engineering, Industries and Construction	-	-	-	-	-	-	-	-	-	13	0	8	12
Health and Social Services	-	-	-	-	79	234	566	530	708	841	800	760	323
Services	-	-	-	-	-	-	-	-	-	-	0	8	20
Total	1 955	2 398	1 201	1 141	3 029	6 382	8 540	6 851	8 349	10 013	9 171	9 579	8 957

Source: Government of Portugal (2009). Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais, MCTES. Lisbon

Other conventional universities and Polytechnics are starting to offer DL programmes and courses. This includes most of the engineering schools, as well schools of medicine for example, the new programmes at University of Minho and the Universities of Lisbon and Porto. University of Aveiro has been actively promoting the use of ICT to improve teaching and learning conditions in all the courses, and University of Coimbra also offers DL courses in selected departments. Among the Polytechnics, Leiria, and Instituto Superior de Gestao Bancaria (ISBG) are particularly active in offering DL programmes. Most Universities and Polytechnics do not consider DL as a major activity. Their main interest in DL is on enriching classroom lecturing, that is, using modern DL pedagogy as a supplement to face-to face learning in blended models. There is the beginning of a trend where eLearning pedagogy being applied on an institution-wide basis.

II.2 Pedagogical developments

Only recently UAb has switched with its strategic plan in 2006 to a more modern pedagogical approach, where a new constructivist pedagogical model has been introduced and a modern eLearning environment with a network of regional learning centres was established (UAb 2006 and 2008). In the academic year 2008/2009 all courses offered by UAb are taught in eLearning regime.

Among the HEI institutions practically all have adopted learning management systems like Moodle and Blackboard and use other solutions including videoconferencing, blogs, wikis, social bookmarking, and podcasting. Some institutions created efficient support units (Polytechnico de Leiria and the University of Aveiro) while others have left introduction of online programme to the initiative of individual departments (University of Coimbra). In some cases proprietary solutions have been developed, such as at the Banking institute, ISGB. A considerable amount of expertise has been gained so far. Preferred areas for such activities have been short courses for professional upgrading, specialisation courses and courses for foreign students abroad.

II. 3 Funding arrangements and cost of DL

The existing framework to allocate funding to public institutions is based on the 1997 Law for HE funding. This Law does not provide any specific treatment for financing DL students. Hence, there is no special treatment (formulas) for funding DL programmes in traditional HEIs.

UAb is treated as a special case in this Law in which the UAb is viewed as being outside the HE system. Its funding is a lump sum (that is not based on any formula) allocated on a yearly basis after the approval of the public budget to higher education by the Parliament. Although the decision is taken annually by the Government, the public funds allocated to UAb each year has been constant percentage of 1.1% of the overall public funding for the full HE system. In 2008, the annual expenditure of UAb was around 18 million Euros, out of which 63% came from the public sources.

III. Policy Challenges and Approaches

III.1 Policy challenges

III.1.1 Small size, low volume

Enrolment in distance learning programmes makes up around 3 % of all higher education enrolment in Portugal, which is rather small compared to some European countries. Two arguments are usually advanced to explain Portugal's small DL sector: its small population base and low ICT use by its population. Neither of these arguments is very persuasive.

The small size is not explained by the size of country's population. Catalonia, for example, has a smaller population than Portugal (7M people), but its distance learning university, UOC, has a student body more than four times as large as the Portuguese counterpart, UAb.

Similarly, the relative lack of digital literacy in the adult Portuguese population is also not a convincing

explanation. On the one hand, there has been a significant improvement in ICT usage in Portugal in recent years. In fact, among with those with higher education qualifications, Portugal's penetration rate of ICT is above the European average. It is true that ICT usage among the Portuguese with only basic qualifications remains very low. However, this need not be a challenge specific to Portugal as it is shared by other Southern European countries as Greece, Italy or Spain.

III.1.2 Limited diversity of offer

A second feature and a major limitation of Portuguese distance learning is its limited range of offerings. Only a few areas are covered and many of the natural, health and environmental science fields offer few DL courses and degrees. Until very recently, the DL student body was concentrated among teachers.

III.1.3 Quality issues

As already noted, DL learning in Portugal has only recently made transition to e-learning pedagogy. The reliance until recently was largely in the classical DL mode based on paper. The transition phase of UAb is now completed. Other HEIs offering or contemplating to offer DL programmes are using the new DL pedagogy. The research base supporting innovation in DL, however, is relatively under-developed, though some progress has been made in recent years at UAb.

The relatively low range of DL offerings and the large reliance on classical pedagogy until recently has created a rather weak image of the quality of DL, particularly in the eyes of the traditional universities. This image problem holds not only for Portugal; but seem to be particularly acute in Portugal.

III.2 Policy options

III.2.1 Reasons for expanding DL

Potentially, there are some 1.5 million Portuguese adults with upper secondary qualification who could benefit from lifelong learning opportunities. In addition there is an additional approximately one million population that has higher education qualification and could potentially benefit from qualification upgrading using the DL approach. Existing supply of places barely scratches this potential. Moreover, the scope of DL is not limited to non-traditional students. With the use of new technologies in DL, the scope can reach the wider group of traditional students, who can benefit from blended or mixed-model approaches that combines distance with face to face learning.

As demand for tertiary education expands, governments struggling to meet their budget constraints look for ways of efficiency in study costs. Compared with F2F, distance learning can be provided at a lower marginal cost for comparable quality. The fact that DL implies a high amount of autonomous self study on the part of the student cuts the variable costs of F2F components. Provision of good quality DL involves large up-front investment but the marginal cost can be low if there is good student uptake. The large up-front investment come from preparation of teaching material for self study, and technological and pedagogical infrastructure, including teacher training and tutoring costs (for a detailed discussion of eLearning costs see Laaser (2008).

High degrees of regional insularity and lack of student mobility across institutions of higher education are well-known features of the Portuguese higher education landscape. This has led to proliferation of regionally dispersed provision that is often inefficient given the small volume. DL can bring higher education to the home. It provides an attractive option to pool scattered but small scale local demand into larger a larger scale that can be met more efficiently through lower marginal costs of DL.

III.2.2 How much expansion?

One approach that could be considered is to develop the targets on the basis of what has been achieved in the countries with which Portugal wishes to compare itself. For example, some estimates can be obtained by taking the per cent of enrolment in distance learning higher education to total higher education enrolment [(DL/HE) %] that has been attained in the advanced countries. This can give an indication of what has proven to be attainable in practice. The difficulty here, however, is that there is a large variation of this percentage across countries (and regions) and this can give different estimates. The case of Catalunya, as mentioned above, shows that its distance learning university has attained a percentage of DL enrolment that is four-fold larger than the Portuguese (UAb) experience. This example would suggest enrolment in DL programmes of the order of 40,000, roughly four-times the level of UAb student body. Although we do not have firm data from other countries, a proportion of distance learning enrolment around 10 per cent of higher education may not be unreasonable. Moreover, the percentages are rising, for example in Brazil. Applying the 10% ratio to the peak higher education enrolment achieved in Portugal (400,000) would suggest a possible target of around 40,000 for the next few years. As demand and supply conditions change, what appears as a large increase at the moment may begin to look as too small over time.

In addition to other reforms, any significant expansion of the DL sector would require significant levels of

additional investment. In other words, the existing capacity does not have enormous slack to accommodate major expansion in DL offers.

III.3 Policies to expand the DL sector

III.3.1 Activating demand

Sustainable expansion of the DL sector would require a range of actions, both on the part of higher education institutions and the Government. It is helpful to use the prism of demand and supply to understand the nature of the action required.

The pool of the large unexploited potential demand has been commented upon earlier. A variety of factors may be causing the potential demand to remain dormant. One factor may be the inefficiency of match between learner needs and what is available on offer. A better understanding of learner demand would be needed for designing DL programmes. Another constraint could be the inadequacy of information to participants on what is on offer. A third factor may be that what is available is not valued, either by the labour market or as a basis for furthering qualifications. Another factor may be that potential applicants may have difficulty in meeting eligibility requirements for access to DL courses, whether in terms of subject area or the ICT requirements for on-line interactive study. Available courses may be too expensive in terms of the value they bring. Finally, there may be institutional hurdles, such as age-limits, that limit access to some programmes or funding.

These constraints can be addressed through a variety of approaches. The demand base can be expanded by measures such as the provision of foundation training in ICT and in bridging courses to improve eligibility for DL programmes. The admission requirements need not lower standards but can be designed to take account of elements of eligibility not considered for F2F students. For example, DL students may already have some form of qualifications that should be taken into account. Massive marketing campaigns have been used in many countries to raise awareness of the programmes that are available and the value they can offer. Information about the progression routes through the qualifications structure can help potential distance learners in assessing the value of DL programmes. Market research can be helpful in determining the types of programmes desired by learners. Contacts with professional organisations and institutes can be extremely helpful in this regard and UAb is beginning to explore this avenue more aggressively.

The experience with the Decree-Law of 2006 (64/2006, March) that facilitated entry of adults age 23 and over into higher education (commonly known as M23) is that of positive expansion, but so far the DL share has been limited. This may be due to the limited DL offers or because of their more stringent eligibility criteria in DL programmes. Consideration should be given to expanding eligibility to the group below age 23. Development of bridging courses (such as those developed by polytechnic of Leiria) could be provided on a national basis. Online curricula to acquire the necessary qualification to enter HE for those who missed secondary school certificate could be very helpful in expanding the potential pool of DL applicants. Programme of prior learning assessment can assist potential applicants in assessing their eligibility requirements.

III.2 Relaxing supply constraints

Another priority for the DL sector is to expand significantly the offer base, as significant expansion in enrolment cannot be achieved within the spectrum of current offers. Potentially, new programmes can be established in knowledge-based services and access to training in every walk of life. But this requires the institutions to be more proactive in seeking new students. They can develop relationships with a whole range of professional groups. Post-graduate courses can be designed specifically for certain companies, such as in the areas of management and marketing. Special attention needs to be given to the potential for "short cycles" (i.e., "Technology Specialization Courses", CETs, as particularly offered through the polytechnics). The experience over the past years has been very positive, particularly in the Polytechnic sector, which has added about 5000 new students per year. The Polytechnics can play a particularly important role in promoting demand for such "vocationally-oriented" programmes given through DL.

IV. Restructuring the institutional priorities and provisions

IV.1 Expanded programme offers by UAb

What roles different types of DL providers – Universities and Polytechnics, UAb and other institutions – should play in expanding Portugal's DL sector? We came to the conclusion that the size of expansion being contemplated can only be achieved by following a **two-pronged** approach. It would require, in the first instance, a significantly expanded range of offers from UAb, the one dedicated DL institution the country has. But this would not be sufficient by itself; this effort would need to be combined with a range of collaborative efforts among a number of HEIs institutions. Both the Universities and the Polytechnics need to make their contributions through separate and specialised collaborative efforts.

Nonetheless, further expansion would need to come from a substantially diversified offering of courses by the University. UAb can specialise in selected offer areas and build capacity in new ones. In particular, it can offer lifelong learning opportunities to a wider population. Areas reserved for UAb could include those that are more difficult to implement by traditional HEIs, and that need specific financial support, such as

DL programmes delivered to socially disadvantaged students, disabled students, programmes that provide opportunities to those who cannot be "traditional" students. It can offer more courses in law, some elements of medical and health studies, economics and business administration, and technical education. It can further expand its programmes in Portuguese speaking countries and steps are being taken currently to go beyond the traditional field of language training.

Clearly these efforts by the University would require new funding. The current financing arrangement where the Government's contribution is more or less fixed percentage of HE expenditure (1.1%) would need to be removed. The tool of performance contracts can be used to achieve programme expansion against specified quality and performance targets.

IV.2 Promoting institutional collaboration

Theoretical considerations and experience from various countries offer a number of models of collaborative arrangements. There is a so-called brokerage model, where an institution plays the role of a broker between those who produce and those who demand DL courses. A project management model offers another approach, where an institution develops and offers courses while local HEIs are responsible for tutoring and examinations. A third model envisages an institution to provide didactic and technical services to other member institutions, including research and advice on organisational reform. In practice, country experiences combine elements of these simplified stylised approaches including the joint offer of DL courses and joint tutoring and sharing of the research effort.

The consortium approach has been applied successfully in many countries. Two examples may be cited from Germany. The Multimedia Kontor Hamburg is a publicly financed institute to support cooperation among seven universities of the city of Hamburg, catering for around 70,000 students. The institute is a mixture of service provider and project management. Its tasks include project management, offering expertise and counselling, marketing and training.

Another example is the "Virtuelle Hochschule Bayern". The Bavarian Virtual University, is an institution founded in 2000 by all nine state universities and all 17 state universities of applied sciences in Bavaria. A further ten universities in Bavaria outside the jurisdiction of the Bavarian Ministry of Higher Education have also joined the consortium. The aim of the VHB is to complement the programmes of the traditional universities, not to replace them. With the help of the VHB, students can earn credit points in individual courses. They cannot obtain degrees, as the VHB does not offer complete courses of study. The total number of course enrolments is around 50,000. Basic financing for the University comes from public state budget with the yearly amount of 3,6 Million Euros. Some additional resources are provided by member universities.

In Brazil, co-operation between HE Institutions offering DL has been successfully attained in two programmes: Universidade do Brasil (UAB) and CEDERJ. UAB, is a publicly funded joint programme of Brazil's Ministry of Education with the State and Municipalities, with a co-operative offer by 70 public HE Institutions, now has about 100,000 students in undergraduate and graduate programmes. These HE Institutions share the 550 learning centers distributed all over Brazil and several other facilities like materials production and delivery, internet facilities, training in DL for the professors, tutors and technical staff, among others. The learning centers and the infrastructure are partially provided by the State and Municipal governments.

Centro de Educação a Distância do Estado do Rio de Janeiro (CEDERJ), is a consortium composed of six public universities, offering nine programmes for 24000 students, with 33 learning centres distributed in the State of Rio de Janeiro. The disciplines in one particular programme are shared among the universities. All the academic activities are the responsibility of the individual university, with the DL courses being offered by the same professors as the F2F ones. To support these activities a State Foundation, CECIERJ, was created with a specific budget, which produces the materials with the professors of the universities, administers the DL process, the learning centres, the platform, the F2F teaching and the DL tutorial systems.

A consortium approach has many advantages to offer. It allows the sharing of common administrative services, some basic infrastructure like server hosting and joint marketing and research, sharing of development cost and tutorial support. An additional advantage of the consortium approach is that it can help to create an online community of experts and users; it may also stimulate general reengineering of the HE institutions with regard to IT infrastructure, budgeting and reorganisation of business processes.

While there have been successes with such consortia, there also have been failed experiments. A case in point is Finland, Finish Virtual University network, which flourished for while but has become whittled down to a department in a ministry. The Finnish National Virtual University was created as a consortium participated by all the Finnish universities and the Ministry at the Department level. It failed for the same reason that some of the consortia fail, that is, the participants did not share the same strategic aims.

IV.3 Potential areas of co-operation

The new framework Law of 2007 (Art. 17) allows the formation of consortia either on a voluntary basis or on the initiative of the Government. Some isolated initiatives have emerged in recent years. Examples include the joint doctoral programme between Aveiro and Porto; training of Technical University of Lisbon staff by UAB in using the learning platform; joint MBA of the Banking Institute and Universidade Catolica;

and shared degree programmes offered by some northern Polytechnics. There are also some examples of offering joint degrees with European or US universities or online courses.

In the situation where the UAb is aiming to expand its offers in new subject areas, it can benefit by co-operating with Universities that have subject knowledge, even if the latter are not planning to offer DL in these subject areas. The UAb can benefit from the subject knowledge it may be lacking and the Universities can benefit through using the material developed in their blended format for their F2F students. Thus there can be consortium arrangements for joint programme development but the programme itself need not be offered jointly.

In the situation where some Universities are planning to offer DL programmes that are not offered (or planned to be offered) by UAb, co-operative arrangements would be beneficial if the UAb can contribute didactic advice, technical assistance with programme development, and training of DL teachers and tutors.

The area of DL research and innovation offers an opportunity of wide collaboration across many institutions as the need to adopt new DL pedagogy is felt by all institutions. A centre based on co-operation among many partners is more likely to win FCT (Fundação para a Ciência ea Tecnologia) funding through competitive procedures than a single institution's application.

The consortium approach may be better suited for the Polytechnics. Polytechnics do not have the broad scope of subject matter disciplines compared to the big universities in the larger cities of the country. Their enrolment levels for courses can be relatively small and their focus is more on teaching than research. Local educational offers can help to reduce migration to larger cities. Although there is already some cooperation among polytechnics e.g. five northern polytechnics offer joint degree programmes, this process can benefit considerably from government support.

Its focus could be on developing on line courses and on administration of the courses, with the aim of supplementing actual degree courses mainly at BA level as well as providing bridging courses to prepare 23+ students for entrance qualification. With respect to preparatory courses there seem to be difficulties to make such offers as they are not incorporated into the regular BA curriculum. However these offers are urgently needed and may, if no other solution is possible, be offered on an extra curriculum basis. Another promising area is the sharing of online laboratory access.

A small technical and pedagogical support unit would be needed to streamline design, plan and coordinate applications for funding, do marketing and organize a quality control. This organisational unit could be responsible for server hosting and for operating the web portal of the consortium. Hosting of the central support unit could be with one of the polytechnics.

Course enrolment would be with the local Polytechnics to avoid the risk of institutions losing students to a centralised organisation. They would also be responsible for tutoring. If course development is funded no parallel face to face courses should be offered. To reduce the need for local premises, most F2F tutoring should be provided on line. Assessment can be taken in written form in a supervised environment supplemented by oral examinations via conferencing facilities at the local institution.

In conclusion, we feel that a collaborative approach among HEIs is an essential component of the strategy for significantly expanding Portugal's DL capacity.

V. Improving the Quality of DL Provision

V.1. Need for quality improvements

The quality of distance learning programmes is one of the important determinants of learner demand. The term quality needs to be considered in its broader meaning to include relevance and impact of the programmes. Learner demand is conditioned by how relevant DL qualifications are in meeting their needs. Similarly, the quality of DL qualifications for learners is dependent on the added value they bring for learner in the labour market and in facilitating progression through the qualifications structure. These outcome measures of quality are dependent on the specificities of input parameters. In general, assuring the quality of DL programmes is different in many respects from the traditional higher education programmes and requires differential treatment.

The quality of DL programmes is also highly dependent on the quality of DL teachers, which requires specialised training and specialised tutors. The capacity to train DL teachers and tutors has been expanded at the UAb but there is a critical need for its expansion in other HEIs planning to offer DL programmes. The quality of DL is also dependent on the quality of research and innovation. This area is relatively underdeveloped in Portugal and requires much attention.

V.2 Strengthening research and innovation

The central role of research and development cannot be overemphasised. Research is needed to develop new instructional design and course material, teacher training programmes, student assessment approaches and quality systems, and DL infrastructures. To explore the potential of mobile learning, game based learning, remote laboratories and the adoption of IT supported business processes in universities are important issues that will shape the future of network based learning. Another area of research that is especially important for Portugal is on different cultural contexts in using and implementing eLearning.

Here the experience with Portuguese-speaking countries can be a valuable asset.

Some progress has been made in the last few years in initiating DL research. The UAb has allocated a specific team to this end, and University of Porto, New University of Lisbon (Nova) and I.P. Leiria also have units for DL research. Despite this, research in the field of DL in Portugal is still far from the levels of other European countries. Most research activities have taken place in the framework of European funding schemes. DL or e-learning is not considered proper research field and there is no specific funded research in this area.

We believe that the Portuguese HEIs should collaborate together to set up a centre dedicated to promote DL research and its use in distance learning programme development and delivery. Several Universities that have significant developmental activity in DL (i.e.: Porto, Nova) and the UAb can work together to establish such a centre, which should be open to other interested participants.

V. 3 Ensuring quality assurance

Ensuring high quality of distance learning is essential for establishing credibility of DL and also for mobilising its demand Universities and Polytechnics that are now entering the DL area need to pay considerable attention to ensuring the quality of DL programmes..

DL programmes have specific requirements of quality control that differ from F2F provision and call for a differentiated approach to the accreditation of programmes, delivery of provision, handling of technical infrastructure, assessment of input and output quality, and processes of student assessment (see for quality issues at European level Laaser 2006).

Although some experts question whether distance learning needs special accreditation criteria compared to traditional teaching, there are specific DL features that require differential treatment. These concern the special features of DL students (usually part time), the use of electronic communication and study materials and the different ratio of staff to students. Distance learning provision needs to be assessed on such special features as coherence of media application and learning outcomes; usability and design of the software; media competencies; tutorial practices; and guarantee of constant access to technology. Quality assurance agencies have already started to develop more specific concepts to rate distance learning. Specific guidelines for e-learning have been developed under the label eBologna, and ENQA offers training workshops on this issue. EADTU has announced that it will be developing a framework for quality assurance in eLearning in co-operation with UNESCO.

It is not essential for Portugal to have an agency especially dedicated to distance learning. Instead, the newly established Portuguese higher education evaluation and accreditation agency could include specific quality criteria to be applied to distance learning programmes. Such a programme should cover the cases where DL may have no F2F requirements as well as situations where blended models are used. The existence of such a programme can provide the legitimacy that has been missing until now. As experience with evaluating quality of distance learning is a new field and Portugal too will have difficulty in finding domestic experts, it would be reasonable for the new agency to draw upon the experience of established European accreditation agencies.

VI. Financing Distance Learning

A major argument for DL as a tool for promoting higher education is its lower marginal cost per student compared with face-to-face instruction. On this logic, expansion of DL could be achieved with comparatively smaller investment. Nonetheless, setting up DL programmes requires large initial investment, which can pay-off in lower marginal costs per student only after several years and with high levels of student intake.

Based on the annual expenditure and the student enrolment, the per student cost of providing DL at UAb would appear to be 2000 Euros, though this could vary from year to year with changes in enrolment. Also, this is a very rough estimate as all UAb students may not be considered as "DL students". In comparison, a similar rough estimate for the rest of the HE sector suggests the annual figures between 3500 to 5500 Euros per student in the traditional Polytechnic and University systems. This rough comparison suggests comparatively lower per student cost of DL, as is commonly believed.

These simple average cost figures could be used to arrive at a rough global figure for new investment by multiplying it with the desired increase in the DL student body. An alternative approach could be to use the per student cost figures from other countries that have achieved a higher scale. Adjustment to these figures could be made by allowing for a lowering of the marginal cost as student enrolment rise. Allowance could also be made for the use of any excess capacity currently in the system. A more sophisticated analysis would require development of cost figure by type of DL provision, since these costs differ by type of programmes, or to estimate it by ECTS rather than on per-programme or per-student basis. Adjustments could be made for the economies that could be achieved for those programmes where the developmental and infrastructure costs have already been met.

Judging from extremely rough and ready figures from other countries, one could use a figure of 1500 Euros as a basis for scaling up estimates. For an increase up to a student body of 30000, roughly three times the current UAb student body, the cost would run into 45 million Euros. For scaling up to the level of 50 thousands, it would be 75 million. While these are extremely rough orders of magnitude and need to be

adjusted downwards to allow for scale economies, existing capacity and other factors, it is clear that the required investment for a three, five or ten-fold increase in DL provision would require large increases in DL resources. To put this in perspective, the current budget of UAb is approximately 18 million Euros. While it is true that distance learning offers a cost effective approach to expanding higher education, it is not to be seen as a cheap educational solution, but rather as a special educational solution, which responds better to particular learner needs.

VII. Facilitative Legislative Framework and Institutional Practices

VII.1 Institutional regulations and practices

Under current legislation, HEIs have pedagogic autonomy and can adopt DL methodology should they so wish, and this autonomy needs to be continued. It is not for legislation to impose on HEIs a direction on pedagogic approaches, either in terms of DL or F2F instruction. However, the definition of when a programme becomes a fully DL programme or a blended programme needs to be clarified, especially if funding and other administrative procedures have to be adjusted, for example to quantify contact hours or decide on the quality assurance guidelines to follow.

One issue for institutions to consider relates to distance teaching, which differs from face to face instruction in several respects. For example, compared with FTF teaching, more DL teachers are part-time, they need to work in teams, and their contact hours are difficult to define.

DL teachers often complain that their work does not receive due acknowledgement in the universities and in tenure processes. They have to put in extra amount of time in developing and implementing DL, such as for content creation, tutoring and supervision but there is no financial incentive to those who want to teach DL courses. Institutional regulations need to be modified to take account of this extra workload and the additional duties should be considered by tenure committees. Arrangements could be made, for example, to offer compensation through reduced contact-hour requirements. For example, teaching career at UAb should be "normalised" to give UAb's faculty the same opportunities to demonstrate their excellence that the colleagues from other universities have. However, we do not believe that a separate career for distance education teachers should be established because this would create the risk of professional differentiation, which would be harmful for DL.

Another issue needing attention by DL institutions relates to the intellectual property rights. Materials and resources developed by the staff should be published under some form of copyright licences (e.g. Creative Commons Licence) in order to foster wide sharing and use among all stakeholders (public in general, students and other higher education institutions). Such policy would create incentives and legitimise payments to staff for the development of digital resources.

One of the difficulties DL providers face relates to the application of enrolment limits at the level of institutions. Distance learning institutions draw their students from three sources: young candidates coming from secondary schools; candidates older than 23 years; transfer or change from course to course. Current regulations impose an enrolment limit for each of these paths. HEIs contend that they cannot freely re-assign vacancies from one path to another to meet their changing demand conditions. Relaxing these rigid constraints would promote greater enrolment.

Another constraint on enrolments is that the vacancy limits do not distinguish between resident and non-resident candidates and there is no set of vacancies for the latter. HEIs would like the flexibility to enrol foreign or non-resident students without including these in the quotas for national/resident students.

One specific need of distance learning concerns more flexible approach to assessment of student eligibility for programmes. DL can attract a number of adults with some previous professional experience and knowledge. To facilitate their decision to enter a DL programme, arrangements should be available to assess prior experience and learning and to take account of them in determining admission eligibility. Programmes of this type allow greater flexibility to the institutions in selecting their students. Establishment of APEL (Accreditation of Prior Experience and Learning) programmes could be organised through independent agencies.

VIII. Conclusion

The international experience with Distance Learning shows two dominant trends. First, from the paper-based classical pedagogy, DL has moved to virtual and interactive teaching and learning processes which represent a dramatic shift from the dimension of "space" in distance learning to the dimension of "time". Second, the use of the blended models by traditional HEIs, which uses the new DL pedagogy in support of classical face to face instruction has spread rapidly and represents the wave of the future.

Compared to other advanced nations of Europe, Portugal started late in developing Distance Learning. Its adoption of fully virtual pedagogy is very recent. As it stands now, DL accounts for around 3% of all higher education enrolment. More than 90% of this comes from UAb, which now has fully on-line programmes and courses. The two international trends noted above are now catching on in Portugal and more HEIs are

beginning to offer selected DL courses and planning to use DL methodology more extensively in blended models.

The DL sector in Portugal is small relative to its population compared with other advanced nations of Europe. The sector is not contributing its share to the national higher education system up to its potential.

There are persuasive reasons for the sector to be expanded, not least to help broaden the base of participation in the higher education system. Given its relatively lower per student cost, its suitability for meeting emerging lifelong learning needs, and the large pool of adults who could potentially benefit from DL, the sector needs to be expanded significantly. To reach the standards of other advanced European benchmarks, the sector's size would need to be expanded several-fold.

Regardless of the precise targets, the sector does need to be expanded significantly. Extensive investment would be needed, on a scale matched by the scale increase in student population. A four-fold increase in enrolments is likely to come at close to four-fold increase in current resources for the sector. In other words, scale economies and existing slack in the system is unlikely to change this equation substantially. The current division between public and private sector, though moving in the direction of a larger contribution from the latter, cannot be expected to change dramatically in the light of the experience from other countries. However, the scope of private sector's contribution, would need thorough examination.

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